

PERM 205

VIC-0777

082-1ef/0

Well Located: 7 029N 051E

FORT PECK

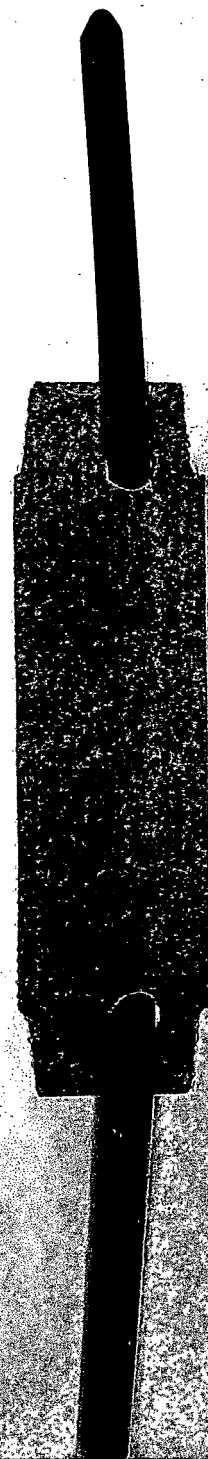
POPLAR EAST, ROOSEVELT County

BUCK ELK 2

MT00009

MT2009-0009

Checklist - Administrative Record



[illegible]

Attachment 4 - CONCURRENCES WITH UIC PROGRAM PERMITTING ACTION

DESCRIPTION OF PROPOSED ACTION: Permit Denial - Grace Petroleum - Buck Flk #2 SWDW

EPA Permit # MTS21PE-0009

As PERMIT WRITER, I certify that this action has been taken in accordance with all UIC Program regulations and guidance in force at this time; and that the attached checklist describes the major actions completed. EXCEPT AS FOLLOWS: None

SIGNED: *Jaura Clemmens*

DATE: 2/24/86

As DIRECT IMPLEMENTATION TEAM LEADER, I have reviewed this permit action to assure that the official file contains documentation indicative of a complete application and a thorough review. All checklists have been completed, the action is written in the format consistent with current guidance, and the content of the action is consistent with others of its type. EXCEPT AS FOLLOWS: \_\_\_\_\_

SIGNED: *Nehrie Ehler*

DATE: 2/25/86

As REVIEWING ATTORNEY, I have reviewed the administrative record (official file) and find that the proposed action is within the authority of the Water Management Division Director, and that the proposed action is enforceable. EXCEPT AS FOLLOWS: \_\_\_\_\_

SIGNED: *Alfred C. Smith*

DATE: 2/26/86

As GROUND WATER SECTION CHIEF, I certify that this action is consistent with UIC Program policy; and that the appropriate accountability systems have been adjusted to reflect this proposed action. EXCEPT AS FOLLOWS: \_\_\_\_\_

SIGNED: *A. Ehler for PAC*

DATE: 2/27/86

As DRINKING WATER BRANCH CHIEF, I have reviewed the proposed action and find that it is consistent with UIC Program objectives. The exceptions noted above have been resolved, or do not create impediments. EXCEPT AS FOLLOWS: \_\_\_\_\_

SIGNED: *Ray E. Fennell*

DATE: 2/27/86

As WATER MANAGEMENT DIVISION DIRECTOR, I have reviewed the findings of my staff and concur with them. I understand the exceptions noted by the Drinking Water Branch Chief, and am exercising my authority to approve this UIC Program permit action.

SIGNED: *Max H. O'Neil*

DATE: 2/28/86



## FINAL PERMIT CONSIDERATIONS

A. THE FOLLOWING EVENTS HAVE TRANSPIRED SINCE THE DRAFT PERMIT WAS RELEASED:

```

YES NO Herald News 10/25/84
_X --- Public notice published - Date: Billings Gazette 10/26/84.
_X --- Copy of published notice received.
_X --- Affidavit of publication received.
--- _X_ Public comments received.
_X_ --- Applicant comments received.
--- --- Internal review comments received.
--- _n/a_ Response to public comments completed.
--- _n/a_ Public hearing held - Date: -----
--- _X_ Final permit prepared.
_X_ --- Permit denial prepared.
_X_ --- Operator requested to Plug & Abandon existing well.

```

B. AS A RESULT OF *PUBLIC COMMENTS*, THE FOLLOWING CHANGES HAVE BEEN MADE TO THE DRAFT PERMIT:

not applicable

C. AS A RESULT OF FURTHER **REGIONAL & HQ REVIEW**, THE FOLLOWING CHANGES HAVE BEEN MADE TO THE DRAFT PERMIT:

not applicable

D. AS A RESULT OF THE *APPLICANT'S COMMENTS*, THE FOLLOWING CHANGES HAVE BEEN MADE TO THE DRAFT PERMIT:

Permittee requested permission to plug and abandon well before Final permit could be issued. Request was granted on January 27, 1986. Well was plugged and abandoned on January 29 and 30, 1986. EPA representative was present at the plugging operation.

E. AS A RESULT OF THE *PUBLIC HEARING*:

not applicable

U. S. ENVIRONMENTAL PROTECTION AGENCY.

REGION VIII.

UIC PROGRAM COMPLIANCE INSPECTION REPORT.

PURPOSE OF INSPECTION: General inspection of some of the wells which have injected into the Judith River Formation within the boundaries of the Ft. Peck Reservation.

DATE OF INSPECTION: July 30, 1985 INSPECTOR'S NAME: Paul S. Osborne

OWNER/OPERATOR REPRESENTATIVE: \_\_\_\_\_

WAS OWNER/OPERATOR REPRESENTATIVE INFORMED OF FINDINGS ON-SITE? No

DESCRIPTION OF PHOTOS TAKEN: Photos were not taken when I was on site. A follow-up was made on July 31, 1985, by George McClammy and Mervin Shields to take documentation pictures.

SUMMARY OF FINDINGS: Facility  
Well was operating when Larry Monson, George McClammy and I arrived at the site Tuesday afternoon. The flare pit was not operating. The site was extremely messy. The pump was leaking. The well head was located immediately in front of the pump house. It is surrounded by a pit which is about 3 feet square and was covered by a large tin box. The pit was nearly full of water. George indicated that he had visited the well site twice within the previous two months and it was operating at both times (June 17, 1985 and July 25, 1985). The water level in the well head pit was 3 feet lower on June 17, 1985 than it was on our July 30, 1985 visit.

The well had no pressure or flow gauges on site. There is an electric meter associated with the injection pump no meter reading was taken. There was surface indication that salt water had run out of the injection well area down the hill into the anogointhe past.

WAS NON-COMPLIANCE IDENTIFIED? Yes XX No \_\_\_\_\_

FOLLOW-UP INITIATED BY: Clemmens ON DATE: 8/1/85

After location of well (Buck Elk #2) was double checked, Office Regional Counsel was alerted - Conference call was made to Jack Nance of Grace. Nance checked with his field man (Ron) and provided field evidence that same day to McClammy that the Buck Elk was disconnected & not injecting. Smith sends letter to Nance, Clemmens sends letter to Nance. Requesting better schematic. Case closed.

UNITED STATES  
U.S. E.P.A. REGION VIII 8WM-DW  
999 - 18TH STREET  
ONE DENVER PLACE - SUITE 1300  
DENVER, CO. 80202-2413

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300  
AN EQUAL OPPORTUNITY EMPLOYER

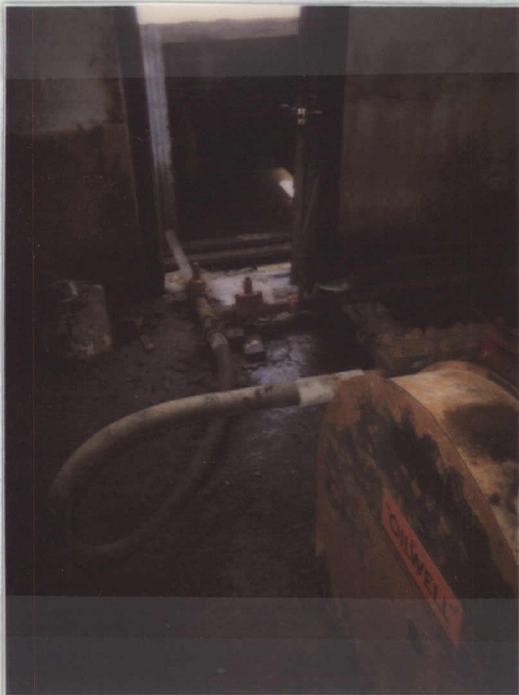
POSTAGE AND FEES PAID  
U.S. ENVIRONMENTAL  
PROTECTION AGENCY  
EPA-335





#2 Buck Elk/Cut Hair SWDW  
 2014' FNL, 639' FWL (SW $\frac{1}{4}$ NW $\frac{1}{4}$ ), Sec. 7-29-51  
 Grace Petroleum Corporation  
 (Photos taken 7/31/85)





#2 Buck Elk/Cut Hair SWDW  
 2014' FNL, 639' FWL (SW $\frac{1}{4}$ NW $\frac{1}{4}$ ), Sec. 7-29-51  
 Grace Petroleum Corporation  
 (Photos taken 7/31/85)

# RECORD OF COMMUNICATION

☒ PHONE CALL    ☐ DISCUSSION    ☐ FIELD TRIP    ☐ CONFERENCE  
☐ OTHER (SPECIFY)

(Record of item checked above)

TO: Laura Clemmens  
DWB

FROM: Alan Hanissey  
OCER

DATE 5-21-85

TIME 11:30

SUBJECT Grace Petroleum Enforcement

## SUMMARY OF COMMUNICATION

HQ has drafted a complaint, and will be forwarding it to Justice shortly.

Alan asked about injunctive relief. I told him about the status of the 3 wells named in the case:

- ① EPU 110-XD - Too far gone to repair economically. Plugged & abandoned, \$85.
- ② Gongs Gov't #1 - Repaired. Passed M/T 5/22/85. Will be injecting this week or next.
- ③ Buck Elk #2 - Not permitted. Waiting for results from Public Hearing on Judith River Formation injection (5/29).

I recommended that the draft complaint remain vague on remedial action as part of injunctive relief. I maintain that such action is unnecessary, that the fine is plenty.

AL - Alan will ship a copy of the draft complaint to you as soon as it goes to Justice. Ken Reich has not yet assigned an attorney to the case in DOJ.

## INFORMATION COPIES

TO: EPU File, Gongs File, Buck Elk File, Pat Crotty.

Enf.  
Sensitive

MAR 25 1985

REF: 8WM-DW

Mark Stoler, Assistant Counsel  
W.R. Grace and Company  
62 Whittemore Avenue  
Cambridge, Massachusetts 02140

RE: FOI Request RIN-0874-85

Dear Mr. Stoler:

In our phone conversation on Friday, March 22, you requested a copy of the letter from EPA to Scott Wilkinson, transmitting certain documents from the EPA Drinking Water Branch files on the W.R. Grace Corporation. I have enclosed a copy of that letter.

The information sent to Mr. Wilkinson was restricted because of a compliance problem. The Agency used its discretion accordingly in withholding certain file documents.

The Drinking Water Branch has not had any dealings with any W.R. Grace and Company subsidiaries besides the Grace Petroleum Corporation. Please call me at (303) 293-1419 if I can be of any help to you.

Sincerely yours,

Laura Clemmens

Enclosure

bcc: Al Smith, 8RC  
Pat Crotty, 8WM-DW  
Vene Glasco, FOI Officer, (A-101)

CLEMMENS/craig/03/25/85/2047P/page 1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

1860 LINCOLN STREET

DENVER, COLORADO 80295

FEB 2 1985

Ref: SRC

Mr. Scott S. Wilkinson  
RFD #1  
Goffstown, New Hampshire 03045

Re: FOIA Request RIN-0399-85

Dear Mr. Wilkinson:

This letter is in response to your letter dated January 22, 1985, in which you requested "EPA's records of the W. R. Grace Co. and all its wholly owned subsidiaries, nationwide." Pursuant to this request, we are providing you with the following documents:

1. EPA request for UIC permit applications for certain salt water disposal wells operated by Grace Petroleum in Poplar, Montana.
2. Transmittal letters and copies of UIC permit applications for Grace Petroleum operated salt water wells in Poplar, Montana.

The total number of pages which were photocopied is 167. At \$.20 per page duplicating costs are \$33.40. Please forward a cashiers check, certified check, or money order in the amount of \$33.40; payable to the United States Environmental Protection Agency, Collection Officer, 8PM-GFM, 1860 Lincoln Street, Denver CO 80295-0699. In referring to your request, please give the following identification number: RIN - 0399-85.

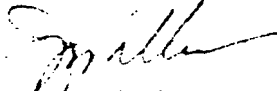
Pursuant to 5 U.S.C. Section 552(b) and 40 C.F.R. Section 2.18(a), we are withholding all information and documentation of investigatory records compiled for law enforcement purposes and interagency or intra-agency memorandums or letters which would not be available by law to a party other than another agency in litigation with the agency.

If you wish to appeal this partial initial denial, you may address such an appeal in writing to the Freedom of Information Act Officer, A-101, U.S. Environmental Protection Agency, 401 M. Street S.W., Washington, D.C. 20460, within thirty (30) days of receipt of this determination.



The issuance of the determination to partially deny this request was directed by Derrick Hobson, Assistant Regional Counsel, Water Branch, in the Region VIII, Office of Regional Counsel. If you have any questions, please contact Mr. Hobson at (303) 293-1458. Other responses may be forthcoming from additional EPA program offices.

Sincerely yours,

  
John G. Welles  
Regional Administrator

Enclosures

cc: Patrick Crotty (8WM-DW)  
Vene Glasco, FOI Officer (A-101)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII  
1860 LINCOLN STREET  
DENVER, COLORADO 80295

MAR 25 1985

REF: 8WM-DW

Mark Stoler, Assistant Counsel  
W.R. Grace and Company  
62 Whittemore Avenue  
Cambridge, Massachusetts 02140

RE: FOI Request RIN-0874-85

Dear Mr. Stoler:

In our phone conversation on Friday, March 22, you requested a copy of the letter from EPA to Scott Wilkinson, transmitting certain documents from the EPA Drinking Water Branch files on the W.R. Grace Corporation. I have enclosed a copy of that letter.

The information sent to Mr. Wilkinson was restricted because of a compliance problem. The Agency used its discretion accordingly in withholding certain file documents.

The Drinking Water Branch has not had any dealings with any W.R. Grace and Company subsidiaries besides the Grace Petroleum Corporation. Please call me at (303) 293-1419 if I can be of any help to you.

Sincerely yours,

A handwritten signature in cursive script that reads "Laura Clemmens".

Laura Clemmens

Enclosure

RECORD OF COMMUNICATION		<input checked="" type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSSION <input type="checkbox"/> F. D TRIP <input type="checkbox"/> CONFERENCE <input type="checkbox"/> OTHER (SPECIFY)	
(Record of item checked above)			
TO:	Mark Stoler, Asst. Counsel W.R. Grace & Co.	FROM:	Laura Clemmens, DWB
		DATE:	3/22/85
		TIME:	2:30
SUBJECT Freedom of Information Request - Scott S. Wilkinson			
SUMMARY OF COMMUNICATION			
<p>1. Request rec'd in DWB 3/21/85</p> <p>2. Called Stoler -</p> <p>A. Told him that we were dealing only with Grace Petroleum Corporation - and not with any other subsidiaries of W.R. Grace.</p> <p>B. Stoler was especially interested in the chemical subsidiaries of Grace, not "natural resources".</p> <p>C. I told him that we had restricted the documents sent to Mr. Wilkinson because of a compliance problem. Because we were dealing with Grace only in the VIC program, I sent all permit files not connected with the compliance problem.</p>			
CONCLUSIONS, ACTION TAKEN OR REQUIRED			
<p>Stoler said that all he would like us to send in response to his request is a copy of our transmittal letter to Scott Wilkinson.</p> <p>I attach a copy of the letter.</p>			
3/22 At said go ahead + copy him on letter			
INFORMATION COPIES			
TO: Smith, Buck Elk #2, Grings Gov't #1, EPU 110-XD.			

GRACE

393  
W.R. Grace & Co.  
62 Whittemore Avenue  
Cambridge, Mass. 02140

(617) 876-1400

March 1, 1985

*FOI Officers - Regions I thru X*  
*RIN-0874-85-*  
*NW 3/19/85*

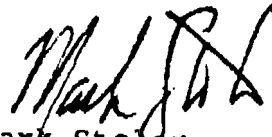
United States Environmental  
Protection Agency Information  
Officer A-101  
401 M Street, SW  
Washington, D.C. 20460

RE: Freedom of Information Request

Dear Ms. Greene:

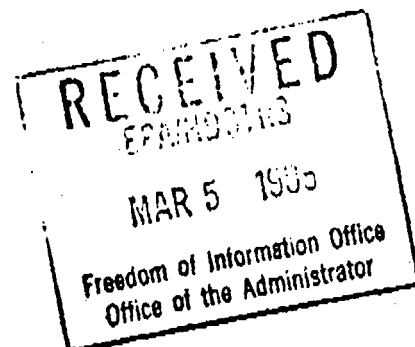
I hereby request all records produced by USEPA to Mr. Scott S. Wilkinson in response to his FOIA request (RIN-0399-85) dated January 22, 1985 and received by your office on February 1, 1985. W. R. Grace & Co. will pay all copying costs associated with responding to this request.

Very truly yours,



Mark Stoler  
Assistant Counsel

MS/mw



*rec'd. RC - 3/6/85*  
*rec'd DWB 3/21/85*

*3 of 3 B*

FROM MARK STOLER W.R. GRACE & CO.			CONTROL NO. (01)RIN-0874-85	
SUBJECT AND DATE FOI REQUEST dated 3/1/85  All records produced by EPA to Mr. Scott S. Wolkinson in response to his FOIA request RIN-0399-85 dated 1/22/85 and rec'd. by your office on 2/1/85.			DATE REC'D in HDQTRS. - 3/5/85 in RC - 3/6/85	
			DUE DATE  3/19/85	
REFERRED (1) Waste Chief/lead 8RC/Air Chief <del>Water Chief</del>	(2) 8WM	(3) 8A&T	(4) 8HWM	8MO
DATE 3/8/85	3/8/85	3/8/85	3/8/85	3/8/85
REPLY SENT TO			DATE RELEASED	
REMARKS  Direct reply. Send copy of billing form (EPA 2505-4), copy of reply and copy of control slip to 8RC in order to clear the record.			ACKNOWLEDGED - DATE	
			<input checked="" type="checkbox"/> NO ANSWER NEEDED  <input type="checkbox"/> (Explain in remarks)	

EPA Form 5180-1 (6-72)  
REPLACES FWPCA FORM 72 AND  
HEW-73 WHICH MAY NOT BE USED.  
\* GPO: 1983-418-620

(Remove this copy only, do not separate remainder.)

MAIL CONTROL SCHEDULE

#8377P

## Permit Review

Buck Elk #2

10-3-84

#MT521PE-0009

Owner

Grace Petroleum Corp.

Buck Elk #2

3 NW 7 29N 51E (location)

Roosevelt County

Judith River (Fm.)

Address the following:

Permit Lang.

Stat. of Basis

- Well Construction + USDW's

- Injection Interval

- Injection Pressure

- Injection Volume

- Monitoring Requirements

- P & A Plan

- Surety Bond

- Statement of Basis Intro

- Radial Area of Exemption  
(Pat's memo 10/15)

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

~~W~~ N/A

✓

# UIC PERMIT TECHNICAL DEVELOPMENT CHECKLIST

Permittee: Grace Petroleum UIC Permit No.: MTSD/PE-0009  
Bck Elk #2

Type of Permit and Permit Action:

☐ Class I ☒ Class IID ☐ Class III ☐ Class IV ☐ Class V  
☐ New Permit ☐ Renewal ☐ Modification

Date application received: 8/6/84

Date application considered complete: 9/13/84

Site visit in conjunction with permit action: ☒ Yes ☐ No

Date permit expires: \_\_\_\_\_

## --PERMIT CONDITIONS--

N/A	Addressed	Included	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Construction Requirements (Pt. 146)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Corrective Action (144.55)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Operation Requirements (Pt. 146)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Requirements for HW Wells (Pt. 144.14)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Monitoring and Reporting Requirements (Pt. 146) (144.54)
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Plugging and Abandonment Plan
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Evidence of Financial Responsibility
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Demonstration of Mechanical Integrity
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Compliance Schedule (144.53)

## --APPLICABILITY TO OTHER FEDERAL ACTS--

Comments Received	No Comments Received	Incorporated	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wild and Scenic Rivers
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	National Historic Preservation
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Endangered Species
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fish and Wildlife
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Executive Orders
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NEPA

Draft or Final Permit plus  
Aquifer Exemption (if applicable)



P 546 002 383

# RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED  
NOT FOR INTERNATIONAL MAIL

(See Reverse)

U.S.G.P.O. 1983-003-517

Sent to	
Sheet and No.	
P.O./State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	

PS Form 3800, Feb. 1982

2/3/86

PS Form 3811, July 1983 A47-845

**SENDER: Complete items 1, 2, 3 and 4.**  
Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- ☐ Show to whom, date and address of delivery.
- ☐ Restricted Delivery.

3. Article Addressed to:  
Jack Nance  
Nance Petroleum Corp.  
143 Union Boulevard 760  
Bakewood, Colo. 80228

4. Type of Service:
- |   |                                  |
|---|----------------------------------|
| <input type="checkbox"/> Registered           | <input type="checkbox"/> Insured |
| <input checked="" type="checkbox"/> Certified | <input type="checkbox"/> COD     |
| <input type="checkbox"/> Express Mail         |                                  |

Article Number  
P546 002 383

Always obtain signature of addressee or agent and  
**DATE DELIVERED:**

5. Signature - Addressee  
X *M. J. Jordan*

6. Signature - Agent  
X

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII  
ONE DENVER PLACE — 999 18TH STREET — SUITE 1300  
DENVER, COLORADO 80202-2413

FEB 28 1986

REF: 8WM-DW

Mr. Jack Nance  
Grace Petroleum Corporation  
143 Union Boulevard, Suite 760  
Lakewood, Colorado 80228

Re: Denial of Authorization to Inject  
EPA Permit Number MTS21PE-0009  
Buck Elk #2 SWDW

Dear Mr. Nance:

On October 25, 1984, EPA issued a draft underground injection control permit for the Buck Elk #2. Final action on the permit was delayed by EPA consideration of public comments on the suitability of salt water injection into the Judith River Formation. EPA issued a technical report and policy statement on the Judith River issue in December, 1985. At that time, the final permit for the Buck Elk #2 was prepared for issuance. However, on January 17, 1986, Grace Petroleum requested EPA approval to plug and abandon the Buck Elk #2 salt water disposal well. Approval was given on January 27, and the Buck Elk #2 was properly plugged on January 30, 1986. Since there is no longer any need for an underground injection control permit for this well, EPA is issuing the enclosed permit denial as a final permit action.

An addendum to the original Statement of Basis, which outlines EPA's decision making process is also enclosed. If you have any questions with regard to this permit denial, please contact Laura Clemmens at (303) 293-1419.

Sincerely yours,

A handwritten signature in cursive script, reading "Max H. Dodson".

Max H. Dodson, Director  
Water Management Division

Enclosure

cc: Bill Engle, M00



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII  
ONE DENVER PLACE — 999 18TH STREET — SUITE 1300  
DENVER, COLORADO 80202-2413

UNDERGROUND INJECTION CONTROL PROGRAM  
DENIAL OF AUTHORIZATION TO INJECT

Pursuant to the Underground Injection Control Regulations of the U.S. Environmental Protection Agency-codified at Title 40 of the Code of Federal Regulations, Parts 124, 144, 146, and 147,


Grace Petroleum Corporation  
Suite 760, 143 Union Boulevard  
Lakewood, Colorado 80228

is hereby denied authorization to operate the Class II injection well commonly known as the Buck Elk #2, located in the Center of the SW 1/4 of the NE 1/4 of Section 7, Township 29 North, Range 51 East in Roosevelt County, Montana.

This document serves as a denial of authorization to recommence injection activities as well as notice of the plugging and abandonment of the Buck Elk #2 salt water disposal well. Grace Petroleum has properly plugged and abandoned the well, and must submit a Plugging Record (EPA Form 7520-13) within thirty (30) days of the date of this denial.

This denial consists of one page. Further, it is based upon representations made by the applicant and on other information contained in the administrative record.

Signed and effective this 28th day of February, 1985.

  
Max H. Dodson, Director  
Water Management Division

7. Condition 16(b) - Injection Fluid Analysis: We agree and will change the condition #16(b)(1) to reflect the necessity to monitor for organics, and will change condition 16(b)(2) to reflect the remainder of the comment.

8. Condition 20 - Financial Responsibility: As discussed, we will revise the permit to reflect the permittee's attainment of the financial responsibility requirements. See attached memo (Attachement A).

9. Construction Requirements: There are no specific construction requirements for a good reason. After evaluating the construction details of the wells, the permit writer determined that the wells currently meet the construction requirements of 146.22(b). However, because records and calculations of cementing and construction are difficult to verify, the Region is relying on the pressure tests and injection profiles to determine the effectiveness of the actual construction in preventing the movement of fluids into USDWs. Approval of the permit is contingent on the permittee proving that the well is actually constructed in the manner represented, and effectively prevents the movement of fluids out of the designated injection zone.

If you have any questions on this memo, please contact me. Thanks for your help.

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE:

SUBJECT: Response to Comments from Alan Morrissey on Grace Permits (11/2/84)

FROM: Laura Clemmens

TO: Derrick Hobson

Here are my responses to the November 2 memo from Alan Morrissey to John Atcheson. Please take my comments into consideration in your upcoming discussions with Headquarters staff this week. I will prepare a final response memo to Atcheson once I have received the final comment letter.

1. Statement of Basis: The Region is aware that the Statement of Basis is not a part of the permit, but assumed that Headquarters and the permittee would like to see it. In the future we will make it clear that the Statement of Basis is not a part of the permit.
2. Part I - Effect of Permit: We agree that the Class II permit is not a shield to the permittee's independent obligation to comply with all UIC regulations. The point is a valid one, and we will amend this condition to reflect it. However, I would like to take this opportunity to point out that the Region was using the boilerplate language from Headquarters in good faith in writing these generic conditions, and relied on headquarters personnel to take these issues into consideration when developing the boilerplate language. Throughout the permit, you have made changes to the language that we assumed was correct. If the boilerplate language is incorrect, we will change it, but we wish such changes had been made prior to our issuing two permits.
3. Condition 7 - Records: This section is already written in accordance with 144.51(j)(2)(ii) from the May 11 promulgation. Where is the problem? If it is with our reference to the Plugging and Abandonment plan included by reference, I don't see a problem. The P and A plan submitted by the applicant has been determined to be in compliance with 144.52 (a)(6) and 146.10. By incorporating it by reference, we have made the P and A condition well-specific and, we feel, more binding on the permittee.
4. Condition 11: The three month period for compliance was meant to be specific to Condition 10 (Monitoring Device). We agree that condition 11 is ambiguous as it stands. Therefore we will eliminate Section E, and insert Condition 10 into Section G (Well Operating and Monitoring Requirements) with a clause within the condition as to time for compliance with that specific condition.
5. Condition 12 - Mechanical Integrity: We agree. The sentence will be added.
6. Condition 14 - Injection Pressure Limitation: We agree, and will substitute "any" for "the".

OCT 19 1984

REF: 8WM-DW

James Johnson  
Grace Petroleum Corporation  
143 Union Boulevard, Suite 760  
Lakewood, Colorado 80228

Re: Draft Underground Injection  
Control Permits for:  
EPU 110-XD (MTS21PE-0007)  
Goings Gov't #1 (MTS21PW-0008)  
Buck Elk #2 (MTS21PE-0009)

Dear Mr. Johnson:

Attached are copies of the draft Underground Injection Control Permits for the above-mentioned wells in Roosevelt County, Montana. Notices should appear soon in the Billings Gazette and in the Herald News notifying the public of their opportunity to comment on the draft permit. Please note that this is also your opportunity to carefully inspect the permit and be sure that you are aware of and agree with all the conditions stated therein. The public comment period will run until November 1984. If you have any questions on this action, please contact Laura Clemmens at (303) 844-2731 by November 1984.

Sincerely yours,

Max H. Dodson, Director  
Water Management Division

cc: Bob Coffia

P 555 473 309

**RECEIPT FOR CERTIFIED MAIL**

NO INSURANCE COVERAGE PROVIDED  
NOT FOR INTERNATIONAL MAIL

(See Reverse)

★ U.S.G.P.O. 1983-403-517

PS Form 3800, Feb. 1982

Sent to <i>James Johnson</i>	
Street and No.	
P.O., State and ZIP Code	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date <i>10/19/84</i>	

Permit Number: MTS21PE-0009

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 U.S.C. 300f-300j-9, commonly known as SDWA) and attendant regulations incorporated by the U.S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations,

Grace Petroleum Corporation

is authorized to inject waste brine fluids into Buck Elk #2, located in the NW quarter of Section 7, Township 29N, Range 51E of Roosevelt County, Montana, into the Judith River Formation, in accordance with conditions set forth herein. This permit does not constitute Bureau of Land Management (BLM) approval for subsurface injection. Applicant needs to contact BLM to determine if changes need to be made to the BLM permit.

All conditions set forth herein refer to Title 40 Parts 144, 146, and 147 of the Code of Federal Regulations and are regulations that are in effect on the date that this permit is effective.

This permit and the authorization to inject are issued for the operating life of the well but shall be reviewed at least every five years.

Signed and effective this \_\_\_\_\_ day of \_\_\_\_\_, 1984.

Max H. Dodson, Director  
Water Management Division



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## PART I. GENERAL PERMIT CONDITIONS

### A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. The underground injection activity, otherwise authorized by this permit or rule, shall not allow the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 142 or otherwise adversely affect the health of persons. Any underground injection activity not authorized in this permit or otherwise authorized by permit or rule is prohibited. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under Section 1431 of the Safe Drinking Water Act (SDWA) or any other law governing protection of public health or the environment for any imminent and substantial endangerment to human health, or the environment.

### B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR Sections 144.39, 144.40, and 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.

### C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

### D. GENERAL DUTIES AND REQUIREMENTS

1. Duty to Comply. The permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.

2. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate. The permittees shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

4. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

5. Duty to Provide Information. The permittee shall furnish the Regional Administrator, within a time specified, any information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

6. Inspection and Entry. The permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

(a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by SDWA any substances or parameters at any location.

## 7. Records.

(a) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit for a period of at least five (5) years from the date of the sample, measurement or report. The permittee shall maintain records of all data required to complete the permit application and any supplemental information submitted for a period of three (3) years from the effective date of the permit. These periods may be extended by request of the Regional Administrator at any time.

(b) The permittee shall retain records concerning the nature and composition of all injected fluids until three (3) years after the completion of plugging and abandonment in accordance with the plugging and abandonment plan, Attachment A. The permittee shall continue to retain the records after the three year retention period unless he delivers the records to the Regional Administrator or obtains written approval from the Regional Administrator to discard the records.

(c) Records of monitoring information shall include:

- (i) The date, exact place, the time of sampling or measurements;
- (ii) The individual(s) who performed the sampling or measurements;
- (iii) The date(s) analyses were performed;
- (iv) The exact method(s) used to take samples
- (v) The individual(s) who performed the analyses;
- (vi) The analytical techniques/methods and types of lab procedures used; and
- (vii) The results of such analyses.

8. Signatory Requirements. All reports or other information requested by the Regional Administrator shall be signed and certified according to 40 CFR 144.32.

## 9. Reporting Requirements.

(a) PLANNED CHANGES. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility.

(b) ANTICIPATED NONCOMPLIANCE. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(c) TRANSFERS. This permit is not transferrable to any person except after notice is sent to the Regional Administrator and the requirements of 40 CFR 144.38 are complied with. The Regional Administrator may require modification or revocation of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under SDWA.

(d) COMPLIANCE SCHEDULES. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(e) TWENTY-FOUR HOUR REPORTING.

(1) The permittee shall report to the Regional Administrator any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

(a) Any monitoring or other information which indicates that any contaminant may cause endangerment to an underground source of drinking water.

(b) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

(11) A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(f) OTHER NONCOMPLIANCE. The permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Permit Condition 9 (e)(11).

(g) OTHER INFORMATION. Where the permittee becomes aware that he failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, the permittee shall submit such facts or information within 2 weeks of the time such information became known to him.

(h) ANNUAL REPORT. The permittee shall submit an annual report to the Regional Administrator summarizing the results of the monitoring required by permit condition 19.16. Such report shall include monthly records on injected fluids, and any major changes in characteristics or sources of injected fluid. The annual report shall cover the period of January 1 - December 30 and shall be submitted by February 15 each year.

## PART II. SPECIFIC PERMIT CONDITIONS

### E. SCHEDULE FOR COMPLIANCE

10. Monitoring Device. The operator shall provide a one-half (1/2) inch iron pipe size (IPS) female fitting, with cut-off valve, to the tubing so that the amount of the injection pressure being used may be measured by the Regional Administrator or his/her representative by attaching a gauge having a one-half (1/2) inch male fitting. The identical device shall be installed on the tubing/casing annulus. All fittings will be maintained in good operating condition.

11. Time for Compliance. Compliance must be obtained within 3 months of the effective date of the permit.

### F. CORRECTIVE ACTION

If at any time it is discovered that injection activities have caused fluid migration through any well bore within the area of review, or there are allegations or suspicions that injection activities have caused fluid migration through any well bore outside the area of review, the permittee shall notify the Regional Administrator as specified in Condition 9(e). In addition, the permittee shall halt injection activities immediately and take such corrective action as prescribed by the Regional Administrator.

The permittee shall not recommence injection until all corrective action has been taken in accordance with a compliance schedule prescribed by the Regional Administrator and approval has been subsequently received from the Regional Administrator.

### G. WELL OPERATION AND MONITORING REQUIREMENTS

#### 12. Mechanical Integrity.

(a) INITIAL DEMONSTRATION. A mechanical integrity test must be performed and the integrity of the well must be demonstrated to the satisfaction of the Regional Administrator prior to commencing injection. In addition, the permittee must demonstrate the location and integrity of the cement bond above and below the injection zone. This shall be done by running a Cement Bond Log (CBL) from the surface to a depth of 1183'. The results of the CBL, along with an interpretive analysis shall be submitted to EPA prior to the effective date of this permit.

(b) SUBSEQUENT DEMONSTRATIONS. A demonstration of mechanical integrity in accordance with 40 CFR 146.8 shall be made every five years from the effective date of this permit. The permittee shall notify the Regional Administrator of his intent to demonstrate mechanical integrity at least 30 days prior to such scheduled demonstration. Results of the test shall be submitted to the Regional Administrator as soon as possible but no later than 60 days after the demonstration. The permittee may continue operations only if the well has demonstrated mechanical integrity, otherwise injection activities shall be halted.

(c) Mechanical integrity tests shall be performed using noncorrosive fluids consisting of either ordinary tap water or formation fluid from the production zone.

13. Injection Interval.

(a) Injection shall be limited to the Judith River Formation in the subsurface interval between 1140 ft. and 1157 ft.

(b) Injection between the outermost casing protecting underground sources of drinking water and the well bore is prohibited.

14. Injection Pressure Limitation.

(a) Injection pressure measured at the surface, shall not exceed 400 pounds per square inch.

(b) Injection at a pressure which initiates fractures in the confining zone or causes the movement of injection or formation fluids into an underground source of drinking water is prohibited.

15. Injection Volume Limitation. The volume of produced brine wastes to be injected into the well will be limited to 1500 barrels per day, and no more than an average daily rate of 525 BWPD.

16. Monitoring Requirements.

(a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall identify the types of tests and methods used to generate the monitoring data.

(b) Injection fluid analysis - The nature of injection fluids shall be monitored:

(1) Initially for Total Dissolved Solids, major ions and Ph.

(2) whenever there is a change in the source of injection fluids. A comprehensive water analysis equivalent to that submitted with the permit application shall be submitted to the Regional Administrator within 30 days of the change in injection fluids.

(c) Injection pressure, flow rate and cumulative volume - Injection pressure, flow rate and cumulative volume shall be observed weekly. At least one observation of injection pressure, flow rate, and cumulative volume, shall be recorded at reasonable intervals no greater than 30 days.

H. PLUGGING AND ABANDONMENT

17. Notice of Plugging and Abandonment. The permittee shall notify the Regional Administrator 45 days before conversion or abandonment of the well.

18. Plugging and Abandonment Plan. The permittee shall plug and abandon the well as provided in the plugging and abandonment plan. See Attachment A. Permittee will abandon the well in a state of static equilibrium with mud.

weight equalized top to bottom in accordance with 40 CFR Section 146.10(c). EPA reserves the right to change the manner in which the well will be plugged if the well is not proven to be consistent with the EPA requirements for construction and mechanical integrity as discussed in condition 10 of this permit.

19. Plugging and Abandonment Report. Within 60 days after plugging the well, the permittee shall submit a report to the Regional Administrator. The report shall be certified as accurate by the person who performed the plugging operation and the report shall consist of either: (1) a statement that the well was plugged in accordance with the plan (see Condition 18); or (2) where actual plugging differed from the plan, specifying the different procedures used.

#### I. FINANCIAL RESPONSIBILITY

20. (a) The blanket surety bond (# 574E0693 - The Travelers Indemnity Company) in the amount of \$10,000 currently held by the permittee for proper plugging of the well, with the State of Montana listed as beneficiary, shall be maintained by the applicant for an interim period of at least ninety (90) days from the effective date of this permit.

(b) Within 90 days from the effective date of this permit, the permittee shall secure a new instrument of financial responsibility listing EPA as beneficiary and shall maintain continuous compliance with the requirement to maintain financial responsibility and resources to close, plug, and abandon the underground injection well.

(c) The new financial instrument mentioned in paragraph (b) above, will be made part of this permit by permit modification. Failure to do so will be grounds for termination of this permit and authorization to inject.

21. Insolvency of Financial Institution. In the event of the bankruptcy of the trustee or issuing institution of the financial mechanism, or a suspension or revocation of the authority of the trustee institution to act as trustee or the institution issuing the financial mechanism to issue such an instrument, the permittee must submit an alternative demonstration of financial responsibility acceptable to the Regional Administrator within 60 days after such event.



## STATEMENT OF BASIS

### GRACE PETROLEUM CORPORATION

### BUCK ELK #2, ROOSEVELT COUNTY, MONTANA

UIC PERMIT NUMBER MTS21PW-0009

#### CONTACTS:

Laura Clemmens  
U.S. EPA, Region VIII  
Ground Water Section  
1860 Lincoln Street  
Denver, Colorado 80295  
Telephone: (303) 844-2731

William Engle  
U.S. Environmental Protection Agency, Montana Office  
Federal Office Building  
301 South Park  
Helena, Montana 59626-5414  
Telephone: (406) 449-5414

#### DESCRIPTION OF FACILITY AND BACKGROUND INFORMATION

The Buck Elk #2 water disposal well is a shut-in disposal injection well. It functions only in emergency situations when produced fluid from the Buck Elk #1 and Cut Hair #1 wells cannot be transferred to normal injection facilities (Goings Government #1). The Buck Elk #2 has been used only occasionally in the past several years and serves as a standby facility. This injector, when utilized, injects produced water into the Judith River Formation from two wells producing hydrocarbons from the Charles Formation as follows: 1) The Cut Hair #1 and; 2) The Buck Elk #1. The Buck Elk #2 has been injecting into the Judith River Formation since December, 1967. There are no known drinking water wells within the area of review.

Grace Petroleum Corporation has supplied all required information and data necessary for permit issuance in accordance with 40 CFR Parts 144, 146, and 147, and a draft permit has been prepared.

The permit will be issued for the operating life of the injection well, therefore, no reapplication will be necessary unless the permit is terminated for reasonable cause (40 CFR 144.39, 144.40, and 144.41). However, the permit will be reviewed every five years.

This Statement of Basis gives the derivation of the site-specific permit conditions and reasons for them. The general permit conditions for which the content is mandatory and not subject to site-specific differences (based on 40 CFR Parts 144, 146, and 147), are not included in the following discussion.

## MONITORING DEVICE

(Condition 10)

In order to allow a representative of EPA to inspect the well and take injection pressure measurements, we are requiring that the operator install an one-half inch fitting to 1) the tubing and 2) the tubing/casing annulus.

## MECHANICAL INTEGRITY

(Condition 12)

EPA has reviewed well logs and workover reports from the Montana Oil and Gas Commission for the Buck Elk #2. The well was originally constructed in 1955, as a producer in the Charles Sand (5925'-5949'). In 1958 the well was suspended from use (dry hole). The well was converted into a water disposal well in 1967. In the conversion, a bridge plug was set above the existing perforations in the 7" string at 5800', with a 100' cement plug placed on top. An additional plug was placed in the 7" string at 1183' with ten feet of cement placed on top. The Judith River was tested for circulation above this plug in two zones (1177-1178 and 1078-1080) these zones were each squeeze cemented with 50 sacks of cement. The well was then perforated in the interval from 1140'-1157' in the Judith River Fm. and a step rate test was performed to increase circulation in the injection zone. A formation breakdown pressure of 900 psi (surface) was determined at this time, and injection commenced.

Because of the need to isolate the injection zone and the uncertainty of the placement of the cement via the cement squeezes, EPA needs to ascertain the location and integrity of the cement bonds in the injection zone. This will be accomplished by the operator running a cement bond log.

## INJECTION INTERVAL

(Condition 13)

According to geological maps of the area, the Bearpaw Shale Formation outcrops in this area of Montana. The Bearpaw is the shale which overlies the Judith River Formation. Therefore, the surface casing is set 137" into a relatively impermeable shale, and the only other USDW's of good quality do not occur in this area. The Judith River Formation has been exempted in a 1/4 mile radius of the wellbore of the Buck Elk #2 as a USDW, and although the ambient water quality of the Judith River in the area is reported to be roughly 4-5,000 mg/l TDS, this well has been injecting water of 88,000 mg/l TDS for over fifteen years, and has already affected the quality of the water in the aquifer. Considering that as a back up well, the Buck Elk 2 will continue to inject only sporadically and at moderate to low volumes, the injection fluid is expected to remain in a small area, and the injection interval as stated is considered to be safe.

## INJECTION PRESSURE

(Condition 14)

Our files contain a record of a step rate test performed in 1967 when the subject well was converted from a production well to a disposal well. The formation breakdown pressure, as indicated by this test is 900 psi. The maximum injection pressure of 400 psi, requested by the applicant is well below the formation fracture pressure and is considered safe.

#### INJECTION VOLUME LIMITATION

(Condition 15)

Current practice involves the injection of an average volume of 525 barrels per day, with a maximum volume of 1500 barrels per day. The operator may continue to inject these volumes. However, at no time may the operator inject at a higher pressure than the maximum specified in permit condition 17 in order to maintain those volumes. In addition, since this well has been permitted solely as a back-up well, EPA expects that the well will not be injecting on a regular daily basis. If the well is to be used to inject more than 16,000 barrels of water per month, EPA must be notified and the permit reevaluated and modified if necessary.

#### MONITORING REQUIREMENTS

(Condition 16)

The permittee is required to monitor water quality of the injection fluids at reasonable intervals. A water sample of injected fluids shall be analyzed initially for Total Dissolved Solids, major ions, and Ph.

The permittee is also required to submit a comprehensive water quality analysis whenever the source of the injection fluid changes.

#### PLUGGING AND ABANDONMENT PLAN

(Condition 18)

The plugging and abandonment plan submitted by the applicant with the permit application is incorporated into the permit and shall be binding on the permittee. In addition, the requirement stating that the well should be abandoned in a state of static equilibrium was not addressed in the submitted Plugging and Abandonment Plan, that condition has been incorporated into the permit by reference. The plugging and abandonment plan submitted by the applicant and included as attachment A will be considered satisfactory only after the permittee has proven that the well has been cemented in a manner consistent with EPA requirements for mechanical integrity as discussed in condition 10 of this permit.

#### FINANCIAL RESPONSIBILITY

(Condition 20)

The bond currently held by the applicant for plugging the well names the State of Montana as beneficiary, not EPA. EPA intends to deliver guidance to the permittee on the type, amount, and mechanism required by permittees to maintain Financial Responsibility in accordance with EPA policy. Therefore, the permit requires the permittee to maintain the current bond for a period of at least ninety (90) days from the effective date of the permit during which time guidance will be provided and the permittee will be required to secure a new bond or other sufficient instrument naming EPA as beneficiary.

Public Participation  
Statement of Basis

## STATEMENT OF BASIS

GRACE PETROLEUM CORPORATION

BUCK ELK #2, ROOSEVELT COUNTY, MONTANA

UIC PERMIT NUMBER MTS21PW-0009

### CONTACTS:

Laura Clemmens  
U.S. EPA, Region VIII  
Ground Water Section  
1860 Lincoln Street  
Denver, Colorado 80295  
Telephone: (303) 293-1419

William Engle  
U.S. Environmental Protection Agency, Montana Office  
Federal Office Building  
301 South Park  
Helena, Montana 59626-5414  
Telephone: (406) 449-5414

### DESCRIPTION OF FACILITY AND BACKGROUND INFORMATION

The Buck Elk #2 water disposal well is a shut-in disposal injection well. It functions only in emergency situations when produced fluid from the Buck Elk #1 and Cut Hair #1 wells cannot be transferred to normal injection facilities (Goings Government #1). The Buck Elk #2 has been used only occasionally in the past several years and serves as a standby facility. This injector, when utilized, injects produced water into the Judith River Formation from two wells producing hydrocarbons from the Charles Formation as follows: 1) The Cut Hair #1 and; 2) The Buck Elk #1. The Buck Elk #2 has been injecting into the Judith River Formation since December, 1967. There are no known drinking water wells within the area of review.

Grace Petroleum Corporation has supplied all required information and data necessary for permit issuance in accordance with 40 CFR Parts 144, 146, and 147, and a permit has been prepared.

The permit will be issued for the operating life of the injection well, therefore, no reapplication will be necessary unless the permit is terminated for reasonable cause (40 CFR 144.39, 144.40, and 144.41). However, the permit will be reviewed every five years.

This Statement of Basis gives the derivation of the site-specific permit conditions and reasons for them. The general permit conditions for which the content is mandatory and not subject to site-specific differences (based on 40 CFR Parts 144, 146, and 147), are not included in the following discussion.

## CASING AND CEMENTING

(Condition 11)

EPA has reviewed well logs and workover reports from the Board of Oil and Gas Conservation of the State of Montana for the Buck Elk #2. The well was originally constructed in 1955, as a producer in the Charles Sand (5925'-5949'). In 1958 the well was suspended from use (dry hole). The well was converted into a water disposal well in 1967. In the conversion, a bridge plug was set above the existing perforations in the 7" string at 5800', with a 100' cement plug placed on top. An additional plug was placed in the 7" string at 1183' with ten feet of cement placed on top. The Judith River was tested for circulation above this plug in two zones (1177-1178 and 1078-1080) these zones were each squeeze cemented with 50 sacks of cement. The well was then perforated in the interval from 1140'-1157' in the Judith River Fm. and a step rate test was performed to increase circulation in the injection zone. A formation breakdown pressure of 900 psi (surface) was determined at this time, and injection commenced.

Because of the need to isolate the injection zone and the uncertainty of the placement of the cement via the cement squeezes, EPA needs to ascertain the location and integrity of the cement bonds in the injection zone. This will be accomplished by the operator running a cement bond log. In addition, the permittee shall prove to EPA that injection fluid is confined to the injection zone by performing an injection profile on the well.

## MONITORING DEVICES

(Condition 12)

In order to allow a representative of EPA to inspect the well and take injection pressure measurements, we are requiring that the operator install an one-half inch fitting to 1) the tubing and 2) the tubing/casing annulus.

## MECHANICAL INTEGRITY

(Condition 13)

EPA will not allow injection into the Buck Elk #2 well until it has been determined that the injection fluid is confined to the injection interval (1140'-1157') and that the well has mechanical integrity. The successful performance of the tests in permit condition #11 will provide adequate assurance that the injection fluid is confined to the proper interval. The mechanical integrity test is necessary to prove that there are no casing or tubing leaks that might allow migration of injection fluid outside of the injection zone.

#### INJECTION INTERVAL

(Condition 14)

According to geological maps of the area, the Bearpaw Shale Formation outcrops in this area of Montana. The Bearpaw is the shale which overlies the Judith River Formation. Therefore, the surface casing is set 137" into a relatively impermeable shale, and the only other USDW's of good quality do not occur in this area. The Judith River Formation has been exempted in a 1/4 mile radius of the wellbore of the Buck Elk #2 as a USDW, and although the ambient water quality of the Judith River in the area is reported to be roughly 4-5,000 mg/l TDS, this well has been injecting water of 88,000 mg/l TDS for over fifteen years, and has already affected the quality of the water in the aquifer. Considering that as a back up well, the Buck Elk 2 will continue to inject only sporadically and at moderate to low volumes, the injection fluid is expected to remain in a small area, and the injection interval as stated is considered to be safe.

#### INJECTION PRESSURE

(Condition 15)

Our files contain a record of a step rate test performed in 1967 when the subject well was converted from a production well to a disposal well. The formation breakdown pressure, as indicated by this test is 900 psi. The maximum injection pressure of 400 psi, requested by the applicant is well below the formation fracture pressure and is considered safe.

#### INJECTION VOLUME LIMITATION

(Condition 16)

Current practice involves the injection of an average volume of 525 barrels per day, with a maximum volume of 1500 barrels per day. The operator may continue to inject these volumes. However, at no time may the operator inject at a higher pressure than the maximum specified in permit condition 17<sup>15</sup> in order to maintain those volumes. In addition, since this well has been permitted solely as a back-up well, EPA expects that the well will not be injecting on a regular daily basis. If the well is to be used to inject more than 16,000 barrels of water per month, EPA must be notified and the permit reevaluated and modified if necessary.

#### MONITORING REQUIREMENTS

(Condition 19)

The permittee is required to monitor water quality of the injection fluids at reasonable intervals. A water sample of injected fluids shall be analyzed initially for Total Dissolved Solids, major ions, and Ph.

The permittee is also required to submit a comprehensive water quality analysis whenever the source of the injection fluid changes.

PLUGGING AND ABANDONMENT PLAN

(Condition 21)

The plugging and abandonment plan submitted by the applicant with the permit application is incorporated into the permit and shall be binding on the permittee. In addition, the requirement stating that the well should be abandoned in a state of static equilibrium was not addressed in the submitted Plugging and Abandonment Plan, that condition has been incorporated into the permit by reference. The plugging and abandonment plan submitted by the applicant and included as attachment A will be considered satisfactory only after the permittee has proven that the well has been cemented in a manner consistent with EPA requirements for mechanical integrity as discussed in condition 10 of this permit.

FINANCIAL RESPONSIBILITY

(Condition 23)

Grace Petroleum Corporation holds a blanket surety performance bond (#249G1055) with the Travelers Indemnity Company of Oklahoma City for three injection wells in the East Poplar and Northwest Poplar Fields; the Goings Government #1, the Buck Elk #2, and the EPU 110-XD. The bond amount is for the total penal sum of \$60,000, securing \$20,000 for each of the three wells. Grace Petroleum has established the necessary standby trust fund with the First National Bank and Trust Company of Oklahoma City.

The bond and the standby trust agreement have been reviewed and approved by EPA as acceptable evidence of financial responsibility.

The bond and standby trust agreement submitted by the permittee have been determined to provide assurance of adequate resources to plug and abandon the Buck Elk #2 well, and shall be maintained for the life of the well. If after a period of one year from the effective date of this permit, the permittee applies for, and EPA determines that another means of financial assurance (e.g., financial statement) will provide adequate proof of financial responsibility, EPA may modify the permit to reflect this change.



ADDENDUM TO  
STATEMENT OF BASIS  
Date prepared: February 24, 1986

Grace Petroleum Corporation  
Buck Elk #2 SWD Well, Roosevelt County, Montana

UIC Permit Number MTS21PE-0009  
Permit Denial

CONTACTS: Laura Clemmens  
U.S. Environmental Protection Agency  
Ground Water Section, 8WM-DW  
999 18th Street, Suite 1300  
Denver, Colorado 80202-1422  
Telephone: (303) 293-1419

U.S. Environmental Protection Agency  
Montana Operations Office  
Federal Building, Drawer 10096  
301 South Park  
Helena, Montana 59626  
Telephone: (406) 449-5414

DESCRIPTION OF FACILITY AND BACKGROUND INFORMATION:

On August 6, 1984, EPA received an Underground Injection Control (UIC) permit application for the Buck Elk #2 salt water disposal well. At the time of application, the Buck Elk #2 was being utilized only occasionally and served as a stand-by facility. When used, the well injected produced water from the Charles Formation into the Judith River Formation. There are no known drinking water wells within the area of review.

The Buck Elk #2 was originally authorized by rule to inject, but lost its rule-authorized status upon Grace Petroleum's failure to submit an application by the specified deadline (July 30, 1984). As a result, the Buck Elk #2 was being permitted as a new injection well.

A draft permit for the Buck Elk #2 was issued on October 25, 1984. No public comment was received at that time. Final permit issuance was postponed because EPA received a request from the Fort Peck Indian Reservation to refrain from granting UIC permits to Judith River injectors until a determination could be made as to whether or not the Judith River Formation was a USDW. EPA issued its Technical Evaluation and Statement of Policy on the Judith River issue on December 27, 1985. The report concluded that the Judith River Formation in the Poplar and Deadman's Coulee Fields had a total dissolved solids level of greater than 10,000 mg/l prior to injection activities, and by definition, was not considered to be an underground source of drinking water (USDW). Further, in its policy statement, EPA concluded that existing injection wells in these fields (including the Buck Elk #2) are allowed to continue injection into the Judith River Formation as long as compliance with EPA rules is maintained.

However, on January 17, 1986, Grace Petroleum requested EPA approval to plug and abandon the Buck Elk #2. The primary reason cited by Grace Petroleum for wanting to plug the well was that the uptake capacity of the Judith River Formation was not sufficient for the disposal needs of the Field. In addition, a pressure test of the casing-tubing annulus run in October, 1984, indicated that the well did not have mechanical integrity and consequently, would require that remedial work to be performed prior to recommencing injection.

On January 27, 1986, EPA approved the plugging and abandonment plan as submitted by Grace Petroleum. An EPA representative was on site to observe the actual plugging operation on January 29 and 30, 1986. The Buck Elk #2 has been determined to be properly and permanently plugged and abandoned. Accordingly, a permit is not necessary, and the permit has been denied.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII  
ONE DENVER PLACE — 999 18TH STREET — SUITE 1300  
DENVER, COLORADO 80202-2413

PUBLIC NOTICE

DENIAL OF AUTHORIZATION TO INJECT  
GRACE PETROLEUM CORPORATION

PURPOSE OF PUBLIC NOTICE

The purpose of this notice is to announce the decision of the Region VIII office of the U.S. Environmental Protection Agency (EPA) to deny an underground injection control (UIC) permit to inject fluids via a Class II salt water disposal well to Grace Petroleum Corporation, Suite 760, 143 Union Boulevard, Lakewood, Colorado, 80228.

BACKGROUND

On August 6, 1984, Grace Petroleum Corporation requested an UIC permit to continue to inject salt water produced in conjunction with the extraction of oil from the Charles Formation into the Judith River Formation through the Buck Elk #2, located in the C of the SW 1/4 of the NE 1/4 of Section 7, Township 29 North, Range 51 East in Roosevelt County, Montana. On October 25, 1984, Region VIII issued public notice of its intent to issue an UIC permit to allow such injection. No public comments were received on the draft permit, but final permit issuance was postponed because EPA received a request from the Fort Peck Indian Reservation to refrain from granting UIC permits to Judith River injectors until a determination could be made as to whether or not the Judith River Formation was a USDW.

On January 17, 1985, Grace Petroleum requested approval from EPA to plug and abandon the well, rather than render it fit for injection. The well has since been plugged and abandoned. Accordingly, an underground injection permit is not necessary, and the permit has been denied.

A handwritten signature in cursive script, reading "Max H. Dodson", is positioned above a horizontal line.

Date of Publication

Max H. Dodson, Director  
Water Management Division

ADDENDUM TO  
STATEMENT OF BASIS  
Date prepared: February 24, 1986

Grace Petroleum Corporation  
Buck Elk #2 SWD Well, Roosevelt County, Montana

UIC Permit Number MTS21PE-0009  
Permit Denial

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On January 27, 1986, EPA approved the plugging and abandonment plan as submitted by Grace Petroleum. An EPA representative was on site to observe the actual plugging operation on January 29 and 30, 1986. The Buck Elk #2 has been determined to be properly and permanently plugged and abandoned. Accordingly, a permit is not necessary, and the permit has been denied.

CLASSIFIED ADVERTISING

## Billings Gazette

SERVING MONTANA AND NORTH IN WYOMING  
P.O. BOX 7507 BILLINGS, MONTANA 59103

## INVOICE

## NOTICE TO ADVERTISER

The rate at which this advertising is extended is subject to possible adjustment based upon advertiser performance.

(Does Not Apply to Legal Ads.)

UIC PERMITS CLERK, Drinking Water  
 Branch, Water Mgmt Div., 8WM-DW  
 U.S. EPA  
 999 18th Street, Suite 1300  
 Denver, CO 80202-2143

	CUSTOMER NUMBER	45269		BILLING DATE	3/10/86			PAGE	
EXPIRATION DATE	DESCRIPTION			CLASS	LINES	TIME	TOTAL LINES	RATE	AMOUNT
3/10/86	62 line legal regarding PUBLIC NOTICE			090	62	1	62	\$1.40	\$86.80
	Publication date: 3/10/86								
Part due accounts are subject to a FINANCE CHARGE of 1½% per month which is an ANNUAL PERCENTAGE RATE of 18% applied to the previous balance.				Bills Payable 10th of Following Month		NET AMOUNT DUE		\$86.80	

# Affidavit of Publication

U.S. Environmental  
Protection Agency  
PUBLIC NOTICE  
Denial Of Authorization  
To Inject

Grace Petroleum Corp.

Purpose Of Public Notice —

The purpose of this notice is to announce the decision of the Region VIII office of the U.S. Environmental Protection Agency (EPA) to deny an underground injection control (UIC) permit to inject fluids via a Class II salt water disposal well to Grace Petroleum Corporation, Suite 760, 143 Union Boulevard, Lakewood, CO 80228.

Background — On August 6, 1984, Grace Petroleum Corporation requested an UIC permit to continue to inject salt water produced in conjunction with the extraction of oil from the Charles Formation into the Judith River Formation through the Buck Elk #2, located in the C of the SW¼ of the NE¼ of Section 7, T29N, R51E in Roosevelt County, MT. On October 25, 1984, Region VIII issued public notice of its intent to issue an UIC permit to allow such injection. No public comments were received on the draft permit, but final permit issuance was postponed because EPA received a request from the Fort Peck Indian Reservation to refrain from granting UIC permits to Judith River injectors until a determination could be made as to whether or not the Judith River Formation was a USDW.

On January 17, 1985, Grace Petroleum requested approval from EPA to plug and abandon the well, rather than render it fit for injection. The well has since been plugged and abandoned. Accordingly, an underground injection permit is not necessary, and the permit has been denied.

Max H. Dodson, Director  
3/10 Water Mgmt. Division

STATE OF MONTANA, }  
County of Yellowstone, } ss.

Judy M. Allen

Being duly sworn, deposes and says:

That she is the principal clerk of The Billings Gazette, a newspaper of general circulation published daily in the City of Billings, in the County of Yellowstone, State of Montana, and has charge of the advertisements thereof.

That the 62 line legal regarding  
PUBLIC NOTICE

a true copy of which is hereto annexed, was published in said newspaper on the following dates: viz:

3/10/86

making in all 1 publication.

Subscribed and sworn to before me this 10th

day of March, 1986.

NOTARY PUBLIC for the State of Montana  
Residing at Billings, Montana

My commission expires 5/13/86.

(NOTARIAL SEAL)

# ADVERTISING ORDER

6X0338NASA  
ORDER NUMBER

DEPARTMENT OR ESTABLISHMENT, BUREAU OR OFFICE

DATE

3-3-86

U.S. ENVIRONMENTAL PROTECTION AGENCY, Water Management Division

The publisher of the publication named below is authorized to publish the enclosed advertisement according to the schedule below provided the rates are not in excess of the commercial rates

charged to private individuals with the usual discounts. It is to be set solid, without paragraphing, and without any display in the heading unless otherwise expressly authorized in the specifications.

NAME OF THE PUBLICATION ADVERTISED IN

BILLINGS GAZETTE

SUBJECT OF ADVERTISEMENT

PUBLIC NOTICE

EDITION OF PAPER ADVERTISEMENT APPEARED

NUMBER OF TIMES ADVERTISEMENT APPEARED

ONE TIME ONLY

DATE(s) ADVERTISEMENT APPEARED

March 10, 1986 (or prior to)

SPECIFICATIONS FOR ADVERTISEMENT

Reduction may be necessary. One (1) AFFIDAVIT OF PUBLICATION AND ONE (1) COPY OF PRINTED NOTICE IN ADDITION TO THE COMPLETED REVERSE OF THIS VOUCHER SHOULD BE MAILED TO: UIC PERMITS CLERK, Drinking Water Branch, Water Management Division, 8WM-DW, U.S. Environmental Protection Agency, 999 18th Street, Suite 1300, Denver, CO 80202-2143

COPY FOR ADVERTISEMENT

COPY ATTACHED FOR PUBLIC NOTICE -

*Denial of Authorization to Inject  
Trace Petroleum  
(MTS21PE-0009)*

AUTHORITY TO ADVERTISE		INSTRUMENT OF ASSIGNMENT	
NUMBER	EPA Delegations Manual 1-1-A(3)	NUMBER	
DATE	January 28, 1976	DATE	3-3-86
SIGNATURE OF AUTHORIZING OFFICIAL	<i>W. Branch</i>	TITLE	Contract Specialist

## INSTRUCTIONS TO PUBLISHERS

Extreme care should be exercised to insure that the specifications for advertising to be set other than solid be definite, clear, and specific since no allowance will be made for paragraphing or for display or leaded or prominent headings, unless specifically ordered, or for additional space required by the use of type other than that specified. Specifications for advertising other than solid and the advertisement copy submitted to the publisher will be attached to the voucher. The following is a sample of solid line advertisement set up in accordance with the usual Government requirements.

DEPARTMENT OF HIGHWAYS & TRAFFIC.  
D.C. Bids are requested for first spring 1966 cement concrete repair contract, including incidental work, Washington, D.C., Invitation No. C-6576-H, consisting of 11,000 sq. yds. PCC Class BB sidewalk repair and 2,000 cu. yds. PCC Class A pavement, alley, & driveway repair, both cut repairs only. Bidding material available from the Procurement Officer, D.C. Sealed bids to be opened in the Procurement Office at 8:00 p.m., November 15, 1965.

Your bill for this advertising order should be submitted on the "Public Voucher for Advertising" form, which is printed on the reverse of this form, immediately after the last publication of the advertisement. If copies of the printed advertisement are not available, complete the affidavit provided on the voucher. Submit the voucher and a copy of the printed advertisement to ▶.....

## IMPORTANT

Charges for advertising when a cut, matrix, stereotype or electrotype is furnished will be based on actual space used and no allowance will be made for shrinkage.

In no case shall the advertisement extend beyond the date and edition stated in this order.



# PUBLIC VOUCHER FOR ADVERTISING

DEPARTMENT OR ESTABLISHMENT, BUREAU OR OFFICE <b>U.S. ENVIRONMENTAL PROTECTION AGENCY, Water Management Division</b>		<b>For Agency Use Only</b>
PLACE VOUCHER PREPARED <b>999 18th Street, Suite 1300, Denver, CO 80202</b>		VOUCHER NUMBER
NAME OF PUBLICATION <b>PUBLIC NOTICE</b>		DATE PREPARED
NAME OF PUBLISHER OR REPRESENTATIVE <b>BILLINGS GAZETTE</b>		SCHEDULE NUMBER
ADDRESS (Street, room number, city, State, and ZIP code) <b>P.O. Box 2507 401 N. Broadway, Billings, Montana 59103</b>		PAID BY

## CHARGES

TYPEFACE <b>Avant Garde</b>		(size of type) <b>6 POINT PER line</b> (inch, square, word, or folio)	
<b>Line Rates</b>		NUMBER OR LINES (Indicate counted or space)	
	FIRST INSERTION	62	\$ 1.40
	ADDITIONAL INSERTIONS GIVE NUMBER ▶		
	<b>TOTAL</b>		\$ 86.80
<b>Other Rates</b>		NUMBER OF UNITS (Indicate inch, square, word, folio)	
	FIRST INSERTION		\$
	ADDITIONAL INSERTIONS GIVE NUMBER ▶		
	<b>TOTAL</b>		\$
Attach one copy of advertisement (including upper and lower rules) to each copy of voucher here. If copy is not available sign the following affidavit.		TOTAL LINE RATES AND OTHER RATES	
		86.80	
		LESS DISCOUNT AT %	
		BALANCE DUE	
		\$ 86.80	
		VERIFIED (Initials)	
		<i>Jan</i>	

## AFFIDAVIT

This represents a true billing for the attached advertising order, with specifications and copy, which has been completed.

SIGNATURE OF PUBLISHER OR REPRESENTATIVE <i>Judy M Allen</i>	
TITLE <b>Legals Clerk</b>	DATE <b>3/10/86</b>

## FOR AGENCY USE ONLY

ADVERTISEMENT PUBLISHED IN	DATE PUBLISHED
I certify that the advertisement described above appeared in the named publication and that this account is correct and eligible for payment.	
SIGNATURE AND TITLE OF CERTIFYING OFFICER <i>Edna E. Walton, UIC Permits Clerk</i>	DATE <b>3/17/86</b>
SIGNATURE AND TITLE OF AUTHORIZING OFFICER	DATE
ACCOUNTING CLASSIFICATION	
6850200 <b>KPN031</b> ORDER <b>6X0338</b> 6A7108KOPN	
2540 08 Est.	
PAID BY CHECK NUMBER	

\* If the ability to certify and authority to approve are combined in one person enter "N/A" (not applicable) here.

U.S. GPO: 1974-555-598

ADVERTISING ORDER

6X0338NASA  
ORDER NUMBER

DEPARTMENT OR ESTABLISHMENT, BUREAU OR OFFICE

DATE  
3-3-86

U.S. ENVIRONMENTAL PROTECTION AGENCY, Water Management Division

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PUBLIC NOTICE

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COPY ATTACHED FOR PUBLIC NOTICE -

*Denial of Authorization to Inject  
Trace Petroleum  
(MTS21PE-0009)*

AUTHORITY TO ADVERTISE		INSTRUMENT OF ASSIGNMENT	
NUMBER	EPA Delegations Manual 1-1-A(3)	NUMBER	
DATE	January 28, 1976	DATE	3-3-86
SIGNATURE OF AUTHORIZING OFFICIAL	<i>W. Brooks</i>	TITLE	Contract Specialist

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IMPORTANT

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# PUBLIC VOUCHER FOR ADVERTISING

DEPARTMENT OR ESTABLISHMENT, BUREAU OR OFFICE <b>U.S. ENVIRONMENTAL PROTECTION AGENCY, Water Management Division</b>		For Agency Use Only
PLACE VOUCHER PREPARED <b>999 18th Street, Suite 1300, Denver, CO 80202</b>	DATE PREPARED	VOUCHER NUMBER
NAME OF PUBLICATION <b>PUBLIC NOTICE</b>		PAID BY
NAME OF PUBLISHER OR REPRESENTATIVE <b>BILLINGS GAZETTE</b>		
ADDRESS (Street, room number, city, State, and ZIP code) <b>P.O. Box 2507 401 N. Broadway, Billings, Montana 59103</b>		

## CHARGES

TYPEFACE	(size of type)	POINT PER	(inch, square, word, or folio)																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 5%;">Line Rates</th> <th style="width: 35%;">NUMBER OR LINES (Indicate counted or space)</th> <th style="width: 20%;">COST PER LINE</th> <th style="width: 40%;">TOTAL COST</th> </tr> <tr> <td>FIRST INSERTION</td> <td></td> <td>\$</td> <td>\$</td> </tr> <tr> <td>ADDITIONAL INSERTIONS GIVE NUMBER ▶</td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>TOTAL</b></td> <td></td> <td></td> <td>\$</td> </tr> </table>				Line Rates	NUMBER OR LINES (Indicate counted or space)	COST PER LINE	TOTAL COST	FIRST INSERTION		\$	\$	ADDITIONAL INSERTIONS GIVE NUMBER ▶				<b>TOTAL</b>			\$
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		VERIFIED (Initials)																	

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SIGNATURE OF PUBLISHER OR REPRESENTATIVE

TITLE

DATE

## FOR AGENCY USE ONLY

ADVERTISEMENT PUBLISHED IN	DATE PUBLISHED
I certify that the advertisement described above appeared in the named publication and that this account is correct and eligible for payment.	
SIGNATURE AND TITLE OF CERTIFYING OFFICER	DATE
SIGNATURE AND TITLE OF AUTHORIZING OFFICER	DATE
ACCOUNTING CLASSIFICATION  6850200 ORDER <b>6X0338</b> 6A7108KOPN  2540 08 Est.	PAID BY CHECK NUMBER

<sup>1</sup> If the ability to certify and authority to approve are combined in one person enter "N/A" (not applicable) here.

U.S. GPO: 1974-555-598

U.S. ENVIRONMENTAL PROTECTION AGENCY  
PUBLIC NOTICE  
DENIAL OF AUTHORIZATION TO INJECT  
GRACE PETROLEUM CORPORATION

PURPOSE OF PUBLIC NOTICE

The purpose of this notice is to announce the decision of the Region VIII office of the U.S. Environmental Protection Agency (EPA) to deny an underground injection control (UIC) permit to inject fluids via a Class II salt water disposal well to Grace Petroleum Corporation, Suite 760, 143 Union Boulevard, Lakewood, Colorado, 80228.

BACKGROUND

On August 6, 1984, Grace Petroleum Corporation requested an UIC permit to continue to inject salt water produced in conjunction with the extraction of oil from the Charles Formation into the Judith River Formation through the Buck Elk #2, located in the C of the SW 1/4 of the NE 1/4 of Section 7, Township 29 North, Range 51 East in Roosevelt County, Montana. On October 25, 1984, Region VIII issued public notice of its intent to issue an UIC permit to allow such injection. No public comments were received on the draft permit, but final permit issuance was postponed because EPA received a request from the Fort Peck Indian Reservation to refrain from granting UIC permits to Judith River injectors until a determination could be made as to whether or not the Judith River Formation was a USDW.

On January 17, 1985, Grace Petroleum requested approval from EPA to plug and abandon the well, rather than render it fit for injection. The well has since been plugged and abandoned. Accordingly, an underground injection permit is not necessary, and the permit has been denied.

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Date of Publication

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Max H. Dodson, Director  
Water Management Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII

1860 LINCOLN STREET

DENVER, COLORADO 80295

PUBLIC NOTICE

DRAFT UNDERGROUND INJECTION CONTROL PERMITS

EPA Region VIII is currently reviewing applications for three UIC permits from Grace Petroleum Corporation of 143 Union Boulevard, Suite 760, Lakewood, Colorado, 80228. All three wells are located in Roosevelt County, Montana. Information specific to each well follows:

- 1) The EPU 110-XD is located in the SE quarter of Section 10, Township 28N, Range 51E. Grace Petroleum Corporation has been injecting produced water from the Nisku and Charles Formations through the EPU 110-XD into the Mission Canyon Formation at a depth of approximately 6300'. The well has been injecting since October, 1973.
- 2) The Goings Government #1 is located in the SW quarter of Section 11, Township 29N, Range 50E. Grace Petroleum Corporation has been injecting produced water from the Charles Formation into the Dakota Formation at a depth of approximately 3700'. The well has been injecting since May, 1979.
- 3) The Buck Elk #2 is located in the NW quarter of Section 7, Township 29N, Range 51 E. The Buck Elk #2 has been injecting produced water from the Charles Formation into the Judith River Formation at a depth of approximately 1150 feet. The Buck Elk is used as a standby well and has been injecting sporadically since December, 1967.

All three wells were existing at the time of the inception of the EPA Underground Injection Control Program, therefore, aquifer exemptions were granted for a 1/4 mile radius of the well bore of each well. An aquifer exemption allows the injection of oil and gas related brines into an aquifer that is otherwise considered an Underground Source of Drinking Water.

Grace Petroleum Corporation has supplied all the required information and the data necessary for permit issuance. EPA has reviewed this information and is hereby issuing notice of intent to issue permits to inject to the EPU 110-XD, the Goings Government #1, and the Buck Elk #2.

All data submitted by the applicant, including the draft permit prepared by EPA for all 3 wells, are contained in the administrative records for each well. This information is available for public inspection at the following locations from 9 a.m. to 5 p.m.

Environmental Protection Agency  
Montana Office  
Attention: John Wardell  
Federal Office Building  
Drawer 10096  
301 South Park  
Helena, Montana 59626-0026  
Telephone: (406) 449-5432

Environmental Protection Agency  
Region VIII  
Ground Water Section  
Attention: Laura Clemmens  
1860 Lincoln Street  
Denver, Colorado 80295  
Telephone: (303) 844-2731

Public comments are encouraged and will be accepted in writing until November 26, 1984. A public hearing will be held at the EPA office in Helena on November 28, 1984, at 10:00 A.M. The hearing will be cancelled if sufficient interest is not shown. Those planning on attending the hearing should contact either the Denver or Helena offices of EPA by Monday, November 26, to determine if the hearing will be held.

NOV 14 1984

# Affidavit of Publication

STATE OF MONTANA, }  
County of Roosevelt. } ss.

Beulah Tufton, being duly sworn, upon oath says: That he is Principle Clerk of The Herald-News, a newspaper of general circulation published weekly at Wolf Point, in the County of Roosevelt, State of Montana; That the notice hereunto attached and entitled Public Notice No. MT-SS-002 was published in said newspaper, the Herald-News, once each week for 1 successive weeks as follows:

The first publication of said notice was on the 25 day of October, 1984

The second publication was on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_;

The third publication was on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_;

The last publication of said notice was on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_;

That the said notice was published in the regular and entire issue of every number of the said newspaper, The Herald-News, during the period and time of said publication, and in the newspaper proper and not in a supplement.

Beulah Tufton

Sworn and subscribed to before me this 8 day of November, 1984.

(SEAL)

Mamie Downs

Notary Public for the State of Montana,  
Residing at Wolf Point, Montana

My Commission Expires 6-8-86, 19\_\_\_\_.

Cost of Publication: 5 Folios 1 Publications \$ 30.00

Attorney for Plaintiff:

PUBLIC NOTICE NO.: MT-85-002  
DRAFT UNDERGROUND  
INJECTION CONTROL PERMITS  
October 25, 1984

EPA Region VIII is currently reviewing applications for three UIC permits from Grace Petroleum Corporation of 143 Union Boulevard, Suite 760, Lakewood, Colorado, 80228. All three wells are located in Roosevelt County, Montana. Information specific to each well follows:

1) The EPU 110-XD is located in the SE quarter of Section 10, Township 28N, Range 51E. Grace Petroleum Corporation has been injecting produced water from the Nisku and Charles Formations through the EPU 110-XD into the Mission Canyon Formation at a depth of approximately 6,300 feet. The well has been injecting since October, 1973.

2) The Goings Government No. 1 is located in the SW quarter of Section 11, Township 29N, Range 50E. Grace Petroleum Corporation has been injecting produced water from the Charles Formation into the Dakota Formation at a depth of approximately 3,700 feet. The well has been injecting since May, 1979.

3) The Buck Elk No. 2 is located in the NW quarter of Section 7, Township 29N, Range 51 E. The Buck Elk No. 2 has been injecting produced water from the Charles Formation into the Judith River Formation at a depth of approximately 1,150 ft. The Buck Elk is used as a stand-by well and has been injecting sporadically since December, 1967.

All three wells were existing at the time of the inception of the EPA Underground Injection Control Program, therefore, aquifer exemptions were granted for a 1/4 mile radius of the well bore of each well. An aquifer exemption allows the injection of oil and gas related brines into an aquifer that is otherwise considered an Underground Source of Drinking Water.

Grace Petroleum Corporation has supplied all the required information and the data necessary for permit issuance. EPA has reviewed this information and is hereby issuing notice of intent to issue permits to inject to the EPU 110-XD, the Goings Government No. 1, and the Buck Elk No. 2.

All data submitted by the applicant, including the draft permit prepared by EPA for all 3 wells, are contained in the administrative records for each well. This information is available for public inspection at the following locations from 9 a.m. to 5 p.m.

Environmental Protection Agency  
Montana Office  
Attention: John Wardell  
Federal Office Building  
Drawer 10096  
301 South Park  
Helena, Montana 59626-0026  
Telephone: (406) 449-5432  
Environmental Protection Agency  
Region VIII  
Ground Water Section  
Attention: Laura Clemmens  
1860 Lincoln Street  
Denver, Colorado 80295  
Telephone: (303) 844-2731

Public comments are encouraged and will be accepted in writing until November 26, 1984. A public hearing will be held at the EPA office in Helena on November 28, 1984, at 10:00 a.m. The hearing will be cancelled if sufficient interest is not shown. Those planning on attending the hearing should contact either the Denver or Helena offices of EPA by Monday, November 26, to determine if the hearing will be held.

HN: 10-25, 1984

**PUBLIC NOTICE**  
 Draft Underground Injection Control Permits  
 EPA Region VIII is currently reviewing applications for three UIC permits from Grace Petroleum Corporation of 143 Union Boulevard, Suite 760, Lakewood, CO 80228. All three wells are located in Roosevelt County, MT. Information specific to each well follows:  
 1) The EPU 110-XD is located in the SE quarter of Section 10, Township 28N, Range 51E. Grace Petroleum Corporation has been injecting produced water from the Nisku and Charles Formations through the EPU 110-XD into the Mission Canyon Formation at a depth of approximately 6300'. The well has been injecting since October, 1973.  
 2) The Goings Government #1 is located in the SW quarter of Section 11, Township 29N, Range 50E. Grace Petroleum Corporation has been injecting produced water from the Charles Formation into the Dakota Formation at a depth of approximately 3700'. The well has been injecting since May, 1979.  
 3) The Buck Elk #2 is located in the NW quarter of Section 7, Township 29N, Range 51E. The Buck Elk #2 has been injecting produced water from the Charles Formation into the Judith River formation at a depth of approximately 1150 feet. The Buck Elk is used as a standby well and has been injecting sporadically since December, 1967.  
 All three wells were existing at the time of the inception of the EPA Underground Injection Control Program, therefore, aquifer exemptions were granted for a 1/4 mile radius of the well bore of each well. An aquifer exemption allows the injection of oil and gas related brines into an aquifer that is otherwise considered an underground source of drinking water.

Grace Petroleum Corporation has supplied all the required information and the data necessary for permit issuance. EPA has reviewed this information and is hereby issuing notice of intent to issue permits to inject to the EPU 110-XD, the Goings Government #1, and the Buck Elk #2.  
 All data submitted by the applicant, including the draft permit prepared by EPA for all 3 wells, are contained in the administrative records for each well. This information is available for public inspection at the following locations from 9 a.m. to 5 p.m.  
 Environmental Protection Agency, Montana Office, Attention: John Wardell, Federal Office Building, Drawer 10096, 301 South Park, Helena, MT 59626-0026, telephone: 406/449-5432.  
 Environmental Protection Agency, Region VIII, Ground Water Section, Attention: Laura Clemmens, 1860 Lincoln Street, Denver, CO 80295, telephone: 303/844-2731.  
 Public comments are encouraged and will be accepted in writing until November 26, 1984. A public hearing will be held at the EPA office in Helena on November 28, 1984, at 10:00 a.m. The hearing will be cancelled if sufficient interest is not shown. Those planning on attending the hearing should contact either the Denver or Helena offices of EPA by Monday, November 26, to determine if the hearing will be held.  
 Public Notice: MT 85-001  
 10/26/84

# Affidavit of Publication

STATE OF MONTANA, }  
 County of Yellowstone, } ss.

Judy M. Allen

Being duly sworn, deposes and says:

That she is the principal clerk of The Billings Gazette, a newspaper of general circulation published daily in the City of Billings, in the County of Yellowstone, State of Montana, and has charge of the advertisements thereof.

That the 118 line legal regarding  
 PUBLIC NOTICE

a true copy of which is hereto annexed, was published in said newspaper on the following dates: viz:

10/26/84

making in all publication.....

Subscribed and sworn to before me this 26th

day of October, 1984.

Jarbo E. Meekins

NOTARY PUBLIC for the State of Montana  
 Residing at Billings, Montana

My commission expires 5/13/86.

(NOTARIAL SEAL)



ADVERTISING ORDER

ORDER NUMBER

X5157 VACH

DEPARTMENT OR ESTABLISHMENT, BUREAU OR OFFICE

U.S. ENVIRONMENTAL PROTECTION AGENCY, Water Management Division

DATE

OCTOBER 19, 1984

The publisher of the publication named below is authorized to publish the enclosed advertisement according to the schedule below provided the rates are not in excess of the commercial rates

charged to private individuals with the usual discounts. It is to be set solid, without paragraphing, and without any display in the heading unless otherwise expressly authorized in the specifications.

NAME OF THE PUBLICATION ADVERTISED IN

HERALD NEWS

SUBJECT OF ADVERTISEMENT

PUBLIC NOTICE

EDITION OF PAPER ADVERTISEMENT APPEARED

NUMBER OF TIMES ADVERTISEMENT APPEARED

ONE TIME

DATE ADVERTISEMENT APPEARED

OCTOBER 25, 1984 (or prior to)

SPECIFICATIONS FOR ADVERTISEMENT

Reduction may be necessary. ONE (1) AFFIDAVIT OF PUBLICATION AND ONE (1) COPY OF PRINTED NOTICE IN ADDITION TO THE COMPLETED REVERSE OF THIS VOUCHER SHOULD BE MAILED TO: Janet Fujita, Compliance Branch, Water Management Division, U.S. Environmental Protection Agency, Suite 103, 1860 Lincoln Street, Denver, Colorado 80295 Mail Code 8WM-C

COPY FOR ADVERTISEMENT

Copy Attached for Public Notice - DRAFT UNDERGROUND INJECTION CONTROL PERMITS

GRACE

AUTHORITY TO ADVERTISE		INSTRUMENT OF ASSIGNMENT	
NUMBER		NUMBER	
EPA Delegations Manual 1-1-A(3)			
DATE		DATE	
January 28, 1976		10/19/84	
SIGNATURE OF AUTHORIZING OFFICIAL		TITLE	
<i>Ellen E. Davis</i>		CONTROL SPECIALIST	
		Chief, Administrative Services	

INSTRUCTIONS TO PUBLISHERS

Extreme care should be exercised to insure that the specifications for advertising to be set other than solid be definite, clear, and specific since no allowance will be made for paragraphing or for display or headed or prominent headings, unless specifically ordered, or for additional space required by the use of type other than that specified. Specifications for advertising other than solid and the advertisement copy submitted to the publisher will be attached to the voucher. The following is a sample of solid line advertisement set up in accordance with the usual Government requirements.

Your bill for this advertising order should be submitted on the "Public Voucher for Advertising" form, which is printed on the reverse of this form, immediately after the last publication of the advertisement. If copies of the printed advertisement are not available, complete the affidavit provided on the voucher. Submit the voucher and a copy of the printed advertisement to ➤

DEPARTMENT OF HIGHWAYS & TRAFFIC  
D.C. Bids are requested for free spring 1984  
most concrete repair contract, including  
detailed work. Washington, D.C. Estimate No.  
C-417-82, consisting of 11,000 sq. yds. PCC Class  
25 sidewalk repair and 1,000 sq. yds. PCC Class  
A pavement, alley, & driveway repair, both for  
repare early. Bidding national agencies from the  
Procurement Officer, D.C. Sealed bids to be opened  
in the Procurement Office at 3:00 p.m.  
November 16, 1984.

IMPORTANT

Charges for advertising when a cut, matrix, stereotype or electrotype is furnished will be based on actual space used and no allowance will be made for shrinkage.

In no case shall the advertisement extend beyond the date and edition stated in this order.

# ADVERTISING ORDER

ORDER NUMBER

X5157 NASA

DEPARTMENT OR ESTABLISHMENT, BUREAU OR OFFICE

U.S. ENVIRONMENTAL PROTECTION AGENCY, Water Management Division

DATE

OCT. 19, 1984

The publisher of the publication named below is authorized to publish the enclosed advertisement according to the schedule below provided the rates are not in excess of the commercial rates

charged to private individuals with the usual discounts. It is to be set solid, without paragraphing, and without any display in the heading unless otherwise expressly authorized in the specifications.

NAME OF THE PUBLICATION ADVERTISED IN

BILLINGS GAZETTE

SUBJECT OF ADVERTISEMENT

PUBLIC NOTICE

EDITION OF PAPER ADVERTISEMENT APPEARED

NUMBER OF TIMES ADVERTISEMENT APPEARED

ONE TIME

DATE ADVERTISEMENT APPEARED

OCTOBER 26, 1984

(or prior to)

SPECIFICATIONS FOR ADVERTISEMENT

Reduction may be necessary. ONE (1) AFFIDAVIT OF PUBLICATION AND ONE (1) COPY OF PRINTED NOTICE IN ADDITION TO THE COMPLETED REVERSE OF THIS VOUCHER SHOULD BE MAILED TO: Janet Fujita, Compliance Branch, Water Management Division, U.S. Environmental Protection Agency, Suite 103, 1860 Lincoln Street, Denver, Colorado 80295 Mail Code 8WM-C

COPY FOR ADVERTISEMENT

Copy Attached for Public Notice - DRAFT UNDERGROUND INJECTION CONTROL PERMIT

*Grace*

AUTHORITY TO ADVERTISE		INSTRUMENT OF ASSIGNMENT	
NUMBER		NUMBER	
EPA Delegations Manual 1-1-A(3)			
DATE		DATE	
January 28, 1976			
SIGNATURE OF AUTHORIZING OFFICIAL		TITLE	
		Chief Administrative Services	

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Your bill for this advertising order should be submitted on the "Public Voucher for Advertising" form, which is printed on the reverse of this form, immediately after the last publication of the advertisement. If copies of the printed advertisement are not available, complete the affidavit provided on the voucher. Submit the voucher and a copy of the printed advertisement to >

DEPARTMENT OF HIGHWAYS & TRAFFIC  
D.C. Bids are requested for the design and construction of a new concrete bridge over the Potomac River, near Washington, D.C. Invitation No. C-11-84, consisting of 11,000 sq. yds. PCC Class 23 sidewalk repair and 1,000 sq. yds. PCC Class A pavement, surf, & driveway repair, both materials and labor. Bidding material available from the Procurement Office, D.C. Sealed bids to be opened in the Procurement Office at 1:00 p.m. November 14, 1984.

## IMPORTANT

Charges for advertising when a cut, matrix, stereotype or electrotype is furnished will be based on actual space used and no allowance will be made for shrinkage.

In no case shall the advertisement extend beyond the date and edition stated in this order.

Permit Writer's Review Notes  
Worksheets, Etc.

# RECORD OF COMMUNICATION

☒ PHONE CALL ☐ DISCUSSION ☐ FIELD TRIP ☐ CONFERENCE  
☐ OTHER (SPECIFY)

(Record of item checked above)

TO: Laura Clemmens

FROM: Jim Johnson (Grace)

DATE 10/25/84

TIME 2:30

SUBJECT Grace injection wells - EPU 110-XD, Buck Elk #2, going 80' #1

## SUMMARY OF COMMUNICATION

- ① "Hypothetical question" - "Suppose that the cost of getting these wells into shape to pass the MIT 5 would cost more than entering & converting an existing producer into an injection well?"
- ② Problem: All 3 wells have problems with scale building up, holes in casing, packers that must be drilled through, etc. - rendering them prohibitively expensive to repair. Jim agreed that it is probably better to take them out of service due to the corrosion.
- ③ Jim + I discussed the possibility of Grace converting a low volume producer in the Taylor field to an injector, so that they could start producing in the field again soon.
- ④ I told him that an aquifer exemption would take 45 days to process if the injection zone turns out to be a USDW. We may be able to issue emergency permit under 144.34(a)(3).

## CONCLUSIONS, ACTION TAKEN OR REQUIRED

Jim will call me with details on his proposal some time next week, and we will discuss the conversion, as well as the plugging & abandonment of the 3 existing wells.

## INFORMATION COPIES

TO: CROTTY, LONG, ENGLE, HOBSON, FILE(2)

Grass Petroleum Corporation  
Buck Elk #2 - East Poplar Field  
Drawing not to scale

Bearpaw Shale

10 3/4 " @ 325' with 460 sx.

Judith River

2 7/8" tubing set @ 1000' with Baker 'D' packer

test perforations squeezed with 50 sx. @ 1078-1080

injection perforations @ 1150-1167'

Clagget Shale

test perforations squeezed with 50 sx. @ 1177-1178'

bridge plug set @ 1183' with 2 sx.

Calculated Cement Top @ 4373'

Howco limit plug set @ 5800' with 25 sx. on top

7" long string set @ 5964' w/240 sx. PBTD - 5933'

Bearpaw Shale

Grace Petroleum Corporation  
Buck Elk #2 - East Poplar Field  
Drawing not to scale

10 3/4" @ 325' with 460 sx.

Judith River

2 7/8" tubing set @ 1080' with Baker 'D' packer

test perforations squeezed with 50 sx. @ 1078-1080

Injection perforations @ 1150-1167'

Claggett Shale

test perforations squeezed with 50 sx. @ 1177-1178'

bridge plug set @ 1183' with 2 sx.

Calculated Cement Top @ 4373'

Howco limit plug set @ 5800' with 25 section top

7" long string set @ 5964' w/240 sx. PBTD - 5933'

Searpaw Shale

Grace Petroleum Corporation  
Buck Elk #2 - East Poplar Field  
Drawing not to scale

10 3/4" @ 325' with 460 ex.

Judith River

2 7/8" tubing set @ 1000' with Baker 'D' packer

test perforations squeezed with 50 ex. @ 1078-1080

injection perforations @ 1150-1167'

Clagget Shale

test perforations squeezed with 50 ex. @ 1177-1178'

bridge plug set @ 1183' with 2 ex.

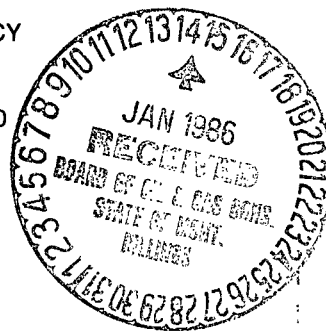
Calculated Cement Top @ 4373'

Howco limit plug set @ 5800' with 25 ex. on top

7" long string set @ 5964' w/240 ex. 'PBTD - 5933'

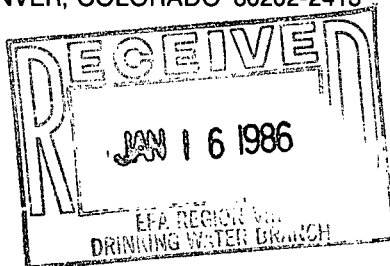


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII  
ONE DENVER PLACE — 999 18TH STREET — SUITE 1300  
DENVER, COLORADO 80202-2413



JAN 08 1986

REF: 8WM-DW



Mr. Thomas Richmond  
Montana Board of Oil and Gas Conservation  
2535 St. John's Avenue  
Billings, Montana 59102

Dear Mr. Richmond:

EPA needs some well completion data on two production wells in the East Poplar Field. Please send me a copy of Montana Form 4 (Well Completion Record) for the following two wells:

Buck Elk #1: SENW Section 7 T29N-R51E  
Cut Hair #1: SENE Section 12 T29N-R51E *SOF*

In addition, please indicate the current status of each of the wells.

Thank you very much for your help.

Sincerely yours

Laura Clemmens  
Physical Scientist  
Ground Water Section

cc: Buck Elk #2 SWDW File

*Laura*

*Buck Elk #1 - Producing oil well  
Cut Hair #1 " " "*

*as of latest report.*



**TARGET SHEET**  
EPA REGION VIII  
**SUPERFUND DOCUMENT MANAGEMENT SYSTEM**

DOCUMENT NUMBER: UIC-0777

SITE NAME: Ft. Peck East Poplar MT2009-0009

DOCUMENT DATE: 1955

**DOCUMENT NOT SCANNED**

Due to one of the following reasons:

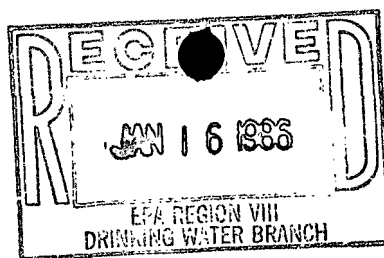
- ☐ PHOTOGRAPHS
- ☐ 3-DIMENSIONAL
- ☐ OVERSIZED
- ☐ AUDIO/VISUAL
- ☐ PERMANENTLY BOUND DOCUMENTS
- ☐ POOR LEGIBILITY
- ☒ OTHER
- ☐ NOT AVAILABLE
- ☐ TYPES OF DOCUMENTS NOT TO BE SCANNED  
(Data Packages, Data Validation, Sampling Data, CBI, Chain of Custody)

DOCUMENT DESCRIPTION:

Microfiche film

Contact the Superfund Records Center to view available document.  
**(303) 312-6473**

Microfiche  
Buck Elk  
2 jackets



## LOCATE WELL CORRECTLY


Form No. 4  
(Gen. Rule 206.3 & 231)(SUBMIT IN TRIPLICATE)  
TOOIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF MONTANA  
BILLINGS OR SHELBY

RECEIVED

JUL 23 1956

## LOG OF WELL

OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF MONTANACompany Richfield Oil Corporation Lease Chester Cut Hair Well No. 1Address P.O. Box 631, Billings, Montana. Field (or Area) East PoplarThe well is located 1982 ft. from (N) line and 662 ft. from (E) line of Sec. 12Sec. 12; T. 29N; R. 50E; County Roosevelt; Elevation 2253' K.B.  
(D.F., R.B. or G.L.)Commenced drilling June 1, 1956; Completed June 19, 1956

The information given herewith is a complete and correct record of the well. The summary on this page is for the condition of the well at the above date.

Completed as Oilwell  
(oil well, gas well, dry hole)Signed R. J. MurrayTitle Eng'rDate 7-13-56

## IMPORTANT ZONES OF POROSITY

(denote oil by O, gas by G, water by W; state formation if known)

From <u>5940'</u>	to <u>5948'</u>	<u>"O"</u>	From _____	to _____
From <u>5958'</u>	to <u>5974'</u>	<u>"O"</u>	From _____	to _____
From _____	to _____		From _____	to _____
From _____	to _____		From _____	to _____

## CASING RECORD

Size Casing	Weight Per Ft.	Grade	Thread	Casing Set	From	To	Sacks of Cement	Cut and Pulled from
<u>10 3/4"</u>	<u>40.5</u>	<u>H-40</u>	<u>8rd</u>	<u>338'</u>	<u>13'</u>	<u>338'</u>	<u>300</u>	
<u>7"</u>	<u>23 &amp; 26</u>	<u>J-55</u>	<u>8rd</u>	<u>5985'</u>	<u>12'</u>	<u>5985'</u>	<u>225</u>	

## TUBING RECORD

Size Tubing	Weight Per Ft.	Grade	Thread	Amount	Perforations
<u>2 1/2"</u>	<u>6.5</u>	<u>J-55</u>	<u>8rd</u>	<u>5950'</u>	<u>5953' - 5960'</u>

## COMPLETION RECORD

Rotary tools were used from 0' to 5987'

Cable tools were used from \_\_\_\_\_ to \_\_\_\_\_

Total depth 5987' ft.; Plugged back to 5982' T.D.; Open hole from \_\_\_\_\_ to \_\_\_\_\_

PERFORATIONS			ACIDIZED, SHOT, SAND FRACED, CEMENTED			
Interval		Number and Size and Type	Interval		Amount of Material Used	Pressure
From	To		From	To		
<u>5958'</u>	<u>5962'</u>	<u>48 - 1/2" Gun Perfs</u>	<u>5958'</u>	<u>5962'</u>	<u>300 gallons</u>	<u>2050 psig</u>

(If P&amp;A show plugs above)

## INITIAL PRODUCTION

Well is producing from B-2 Zone (pool) formation.I. P. 63 barrels of oil per 24 hours Pumping  
(pumping or flowing)Not Measured Mcf of gas per -- hours.  
74 barrels of water per 24 hours, or 54 % W.C.

(OVER)

## INITIAL PRODUCTION—(Continued)

Initial 10-day average production 85 (oil) (bbl./day) (if taken)Pressures (if measured): Tubing 23010 psi ~~23010~~; Not measured psi shut-inCasing 2 psi ~~2~~; Not measured psi shut-inGravity 40.3 ° API (corrected to 60° F.)

## DRILL STEM TESTS

D.S.T. No.	From	To	Tool Open (Min.)	Shut-In	F.P.	S.I.P.	Recovery	Cushlon
1	5934	5950	45 min	15 min	225-665	1740	240' - 90' Oil cut mud 150'	
							Saltwater	0
2	5950	5970	30 min	15 min	0-300	2100	620' - 215' oil cut mud, 135' muddy oil and gas cut salt water	0

## LOGS RUN

Type	Intervals	
	From	To
ES	338	5987
Micro.	5000	5987
Laterolog	5000	5987
RA Log	338	5987

## FORMATION RECORD

From	To	SAMPLE AND CORE NO. AND DESCRIPTION	Top of Formation
		Bearpaw shale	13
		Judith River	1132
		Eagle	1460
		Niobrara	2311
		Greenhorn	2660
		Newcastle	3220
		Dakota Group	3441
		Morrison	3860
		Swift	3950
		Rierdon	3995
		Piper	4565
		Piper Lime	4654
		Gyp Springs	4708
		Spearfish	4910
		Amsden	5048
		Basal Amsden Sdst	5198
		Otter	5230
		Kibby	5430
		Kibby Limestone	5578
		Charles	5682
		"A" Zone	5806
		"A" Zone Base	5830
5940	5948	B-1 Zone	5940
5958	5974	B-2 Zone	5958

LOCATE WELL CORRECTLY

	X		

Form No. 4  
(Gen. Rule 206.3 & 231)

(SUBMIT IN TRIPLICATE)  
TO

OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF MONTANA  
BILLINGS OR SHELBY

LOG OF WELL

RECEIVED  
OCT 9 1955  
M. R. P. H. H. H.  
OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF MONTANA - BILLINGS

Company Richfield Oil Corp. Lease Buck Elk Well No. 1

Address Box 631, Billings, Montana Field (or Area) East Poplar

The well is located 1977 ft. from (N) (S) line and 1964 ft. from (E) (W) line of Sec. 7

Sec. 7; T. 29N; R. 51E; County Roosevelt; Elevation 2184 Gr.  
(D.F., R.B. or G.L.)

Commenced drilling July 7, 1955; Completed August 22, 1955

The information given herewith is a complete and correct record of the well. The summary on this page is for the condition of the well at the above date.

Completed as Oil Well  
(oil well, gas well, dry hole)

Signed J. B. Cowden

Title Engineer

Date Sept. 22, 1955

IMPORTANT ZONES OF POROSITY

(denote oil by O, gas by G, water by W; state formation if known)

From <u>5888</u> to <u>5896</u> <u>0</u>	From _____ to _____
From <u>5903</u> to <u>5918</u> <u>0</u>	From _____ to _____
From _____ to _____	From _____ to _____
From _____ to _____	From _____ to _____

CASING RECORD

Size Casing	Weight Per Ft.	Grade	Thread	Casing Set	From	To	Sacks of Cement	Cut and Pulled from
<u>13 3/8</u>	<u>48</u>	<u>H-40</u>	<u>8rd</u>	<u>317</u>	<u>3</u>	<u>317</u>	<u>300</u>	<u>none</u>
<u>7</u>	<u>23 &amp; 26</u>	<u>J-55</u>	<u>8rd</u>	<u>5943</u>	<u>3</u>	<u>5943</u>	<u>225</u>	<u>none</u>

TUBING RECORD

Size Tubing	Weight Per Ft.	Grade	Thread	Amount	Perforations
<u>2 1/2</u>	<u>6.5</u>	<u>J-55</u>	<u>8rd</u>	<u>5860</u>	<u>5903-09</u>

COMPLETION RECORD

Rotary tools were used from Surface to 5951  
Cable tools were used from \_\_\_\_\_ to \_\_\_\_\_  
Total depth 5951 ft.; Plugged back to 5935 T.D.; Open hole from \_\_\_\_\_ to \_\_\_\_\_

PERFORATIONS			ACIDIZED, SHOT, SAND FRACED, CEMENTED			
Interval		Number and Size and Type	Interval		Amount of Material Used	Pressure
From	To		From	To		
<u>5903</u>	<u>5909</u>	<u>30, 9/16, Jets</u>	<u>5903</u>	<u>5909</u>	<u>300 gal</u>	<u>3050 Max</u>
			<u>5903</u>	<u>5909</u>	<u>900 gal</u>	<u>2700 Max</u>

(If P&A show plugs above)

INITIAL PRODUCTION

Well is producing from B-2 Zone (pool) formation.

I. P. 170 barrels of oil per 24 hours Pumping w/ 16/64" Flowline beah  
(pumping or flowing)

notest Mcf of gas per \_\_\_\_\_ hours.

19 barrels of water per 24 hours, or 9.1 % W.C.

(OVER)

## INITIAL PRODUCTION—(Continued)

Initial 10-day average production \_\_\_\_\_ (bbl./day) (if taken)

Pressures (if measured): Tubing \_\_\_\_\_ 60 \_\_\_\_\_ psi flowing; \_\_\_\_\_ 300 \_\_\_\_\_ psi shut-in

Casing \_\_\_\_\_ 200 \_\_\_\_\_ psi flowing; \_\_\_\_\_ 750 \_\_\_\_\_ psi shut-in

Gravity \_\_\_\_\_ 42.1 \_\_\_\_\_ ° API (corrected to 60° F.)

## DRILL STEM TESTS

D.S.T. No.	From	To	Tool Open (Min.)	Shut-In	F.P.	S.I.P.	Recovery	Cushion
1	5884	5903	240	30	280	2365	40' oil, 70' O&GCM, 510' Salt water	none
2	5903	5921	240	30	1175	2500	1916' oil, 364' oily emulsion 891' Salt water	none

## LOGS RUN

Type	Intervals	
	From	To
Electric Log	317	5951
Microlog	5300	5951
Laterlog	5300	5951
RA Log	317	5951

## FORMATION RECORD

From	To	SAMPLE AND CORE NO. AND DESCRIPTION	Top of Formation
0	3397	Black shale w/ sandstone & limestone streaks	Mont-Cole Grps.
3397	3790	Sandstone & variegated shale	Dakota Group
3790	3898	Variegated shale w/ sand streaks	Dakota Group
3898	4359	Green shale w/ streaks glauconitic sandstone	Morrison
4359	4528	Gray limy shale w/ thin limestone streaks	Swift
4528	4874	Maroon shale & tan limestone	Rierdon
4874	5019	Brick-red shaly sandstone	Piper
5019	5122	Pink dolomite & variegated shale	Spearfish
5122	5200	Purple angular sandstone	Amsden
5200	5383	Gray limestone & Green & gray shale	Basal Amsden-"Heat"
5383	5640	Red sandstone w/ tan limestone streaks	Otter
5640	5810	Anhydrite & limestone	Kibbey
5810	5824	White salt impregnated anhydrite	Charles
5824	5861	CORE #1 Rec. 36'/37' 13½' Anhydrite, 3' limestone, 9' shale, 10½' anhydrite	5770 "A" Zone
5861	5884	White salt impregnated anhydrite	
5884	5903	CORE #2 Rec. 19½'/19' 5' anhydrite, 7' limestone, brown, 7' anhydrite	5892 B-1 Zone
5903	5921	CORE #3 Rec. 18'/18' 1½' anhydrite, 15' limestone, brown, 1½' limestone, dark-gray	5910 B-2 Zone
5921	5924	Brown limestone - oil saturated	In B-2 Zone
5924	5929	Dark gray dense barren limestone	
5929	5936	Gray wet porous dolomite	Wet Dolomite
5936	5951	Interbedded shale, limestone & anhydrite	

Producing well as of 7/86  
per T. Richmond

NOT TO SCALE

Completed as oil well 6/19/54

PERM # : MTS21PE-0009  
FIELD : Poplar East  
WELL : Cut Hair #1  
OPERATOR : Richfield Oil  
(Well within area of review of  
Buck Elk #2) 29N50E SENE12

Unconsolidated  
Bearing 13'

10 3/4" @ 338' w/300SX

1132'

Judith River

1460

Eagle

2311

Niobrara

Greenhorn 2660

← calculated Cement top @ 5057'  
(assuming 10" hole)

2 1/2" @ 5950 - w/perfs 5953-5960'

~~5953-5960~~ Perfs 5958-5962 Charles  
B'zone

7" @ 5985' w/225 SX

TD 5987' PBTD 5992'

Charles Sand

Formation Description

Form Record w/RepNT (Form 4)

Producing Oil Well as of 1/86  
per T. Richmond.

NOT TO SCALE

Completed as oil well 8/22/55

Perm # : MTS21PE-0009

FIELD : Poplar, East

WELL : Buck Elk # 1

OPERATOR : Richfield Oil

(Well within area of review  
of Buck Elk #2)

29N51E SENW7

3397'  
Black Shale  
w/ SS. + LS.  
streaks  
(Bearpaw + Montana  
Colorado groups)

13 3/8" @ 317 w/ 300 SX

3397-3790

Dakota group

etc.

Calculated Cement top @ 5015'  
(assuming 10" hole)

2 1/2" @ 5860 w/ PKR Perfs @ 5903-09

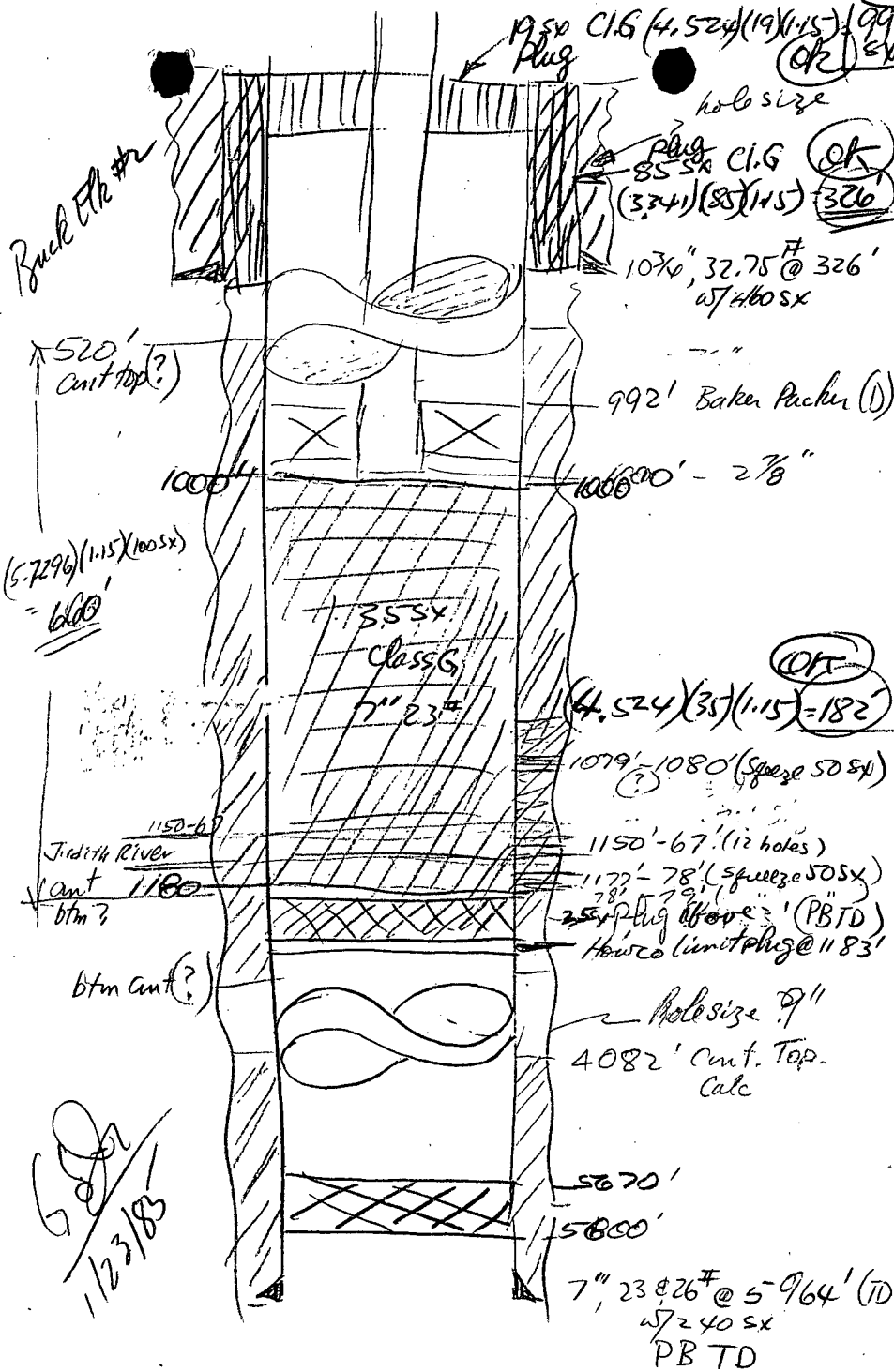
Perfs @ 5903-5909

7" @ 5943 w/ 225 SX

TD 5951, PBTD 5935



<b>RECORD OF COMMUNICATION</b>		<input checked="" type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSSION <input type="checkbox"/> FIELD TRIP <input type="checkbox"/> CONFERENCE <input type="checkbox"/> OTHER (SPECIFY) _____	
		(Record of item checked above)	
<b>TO:</b> <i>Al Smith</i> <i>ERC</i>	<b>FROM:</b> <i>Laura Clemmens</i>	<b>DATE</b> <i>1/16/86</i>	<b>TIME</b> <i>9:00 am</i>
<b>SUBJECT</b> <i>Grace - Fourth Claim for Relief - Complaint</i>			
<b>SUMMARY OF COMMUNICATION</b> <div style="margin-top: 10px;"> <p><i>1. 4th claim for relief requests that Grace P+H The Buck Elk #2</i></p> <p><i>2. Now that GR is resolved, I am permitting The Buck Elk #2.</i></p> <p><i>3. I asked what action I should take. He said to continue with permitting the well. I feel that this is the right course of action to take, in light of the fact that the permit requires Grace to repair &amp; then M-I or P+H well within 60 days.</i></p> </div>			
<b>CONCLUSIONS, ACTION TAKEN OR REQUIRED</b> <div style="margin-top: 20px;"> <p><i>Write permit.</i></p> </div>			
<b>INFORMATION COPIES</b> <b>TO:</b> <i>File - Buck Elk #2</i>			





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF

NOV 06 1984

NOV 2 1984

REGIONAL COUNSEL  
OFFICE OF ENFORCEMENT  
AND COMPLIANCE  
MONITORING

MEMORANDUM

SUBJECT: Comm

FROM: Alar

TO: Joh

Off

Lama:

Hi.

I rec'd this today. I think that you  
might want to review this and comment  
when you deem appropriate.  
Nobody ever said life was supposed to be  
easy?

11-06-84

I have  
Petroleum Co.  
effort not o  
the upcoming  
comments are uisc

Copy of permit

1. The Statement of Basis is not part of the permit. It  
is a regulatory requirement of part of the administrative record  
of the permit. So, YOU DON'T WANT TO SEE IT? ~~WE ARGUED THAT~~

2. Part I, of the permit should clearly state that this  
class II permit is not a shield to the permittee's independent  
obligation to comply with all UIC regulation. OK

144.51 3. As Derrick Hobson has pointed out, the section 7,  
Records, needs to be revised to comply with changes in the  
May 11, 1984 regulations. DONE ALREADY. This has already  
been changed. ~~LOOKS GOOD~~

4. Part II, 11. Why is there a 3 month period for  
compliance? Hopefully compliance will be, should be, immediate  
upon issuance of the permit. ~~OH COME ON. GIVE THEM A BREAK~~

5. Part II, 12. A sentence must be added to clarify  
that normal operation of the well is not allowed until permittee  
receives written permission from the RA after the initial  
mechanical integrity demonstration per 146.08 is evaluated. OK

6. In view of the questions raised by the current API  
litigation, I suggest the word "any" be substituted for the  
word "the" in Part II, 14(b) . . . any confining zone. This  
will clarify our intend that no zone which is a confining zone  
be fractured in normal operations. ~~OK~~

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7. The monitoring requirements for injection fluid analysis currently exclude any analysis for organics. We should at least be told if any chemicals are added to the produced brine. *This would be done if any change were made to inj. fluid - see #*

8. Part II, 20 Financial Responsibility section need to be revised so as to require appropriate security to be continuously maintained from the date the permit is issued. *OK - See att. memo*

9. There are no specific construction requirements listed. All permits, even those for existing wells need construction requirements. The construction performance standards of Part 146 should also be listed. *Well currently meets the const. req. of 146.22(b). The quality of the cement used, and the type of construction is presently being determined by the permittee.*

Attachments

cc: Eric Olson, OGC  
Donald Olson, OWEP  
Derrick Hobson, Region VIII

*Approval of the permit is contingent on the permittee proving that the well, as it is designed, can be constructed to effectively prevent migration of fluids to the surface.*

OFFICE OF

NOV 06 1984

REGIONAL COUNSEL

ROUTING AND TRANSMITTAL SLIP

Date

10/24/84

TO: (Name, office symbol, room number,  
building, Agency/Post)

Initials

Date

1. DAN/DAVE

2. ERIC O.

3. DON O.

4. AL M.

5.

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

Please Review these  
permits & have comments to  
me by ~~by~~ 10/31.  
Thanks.

DO NOT use this form as a RECORD of approvals, concurrences, disposal  
clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)

Room No.—Bldg.

John A.

Phone No.

5041-102

OPTIONAL FORM 41 (Rev. 7-76)

Prescribed by GSA  
FPMR (41 CFR) 101-11.206

\* GPO: 1983 O - 381-529 (232)

10/5/84  
Buck Elk 2

## Construction Review

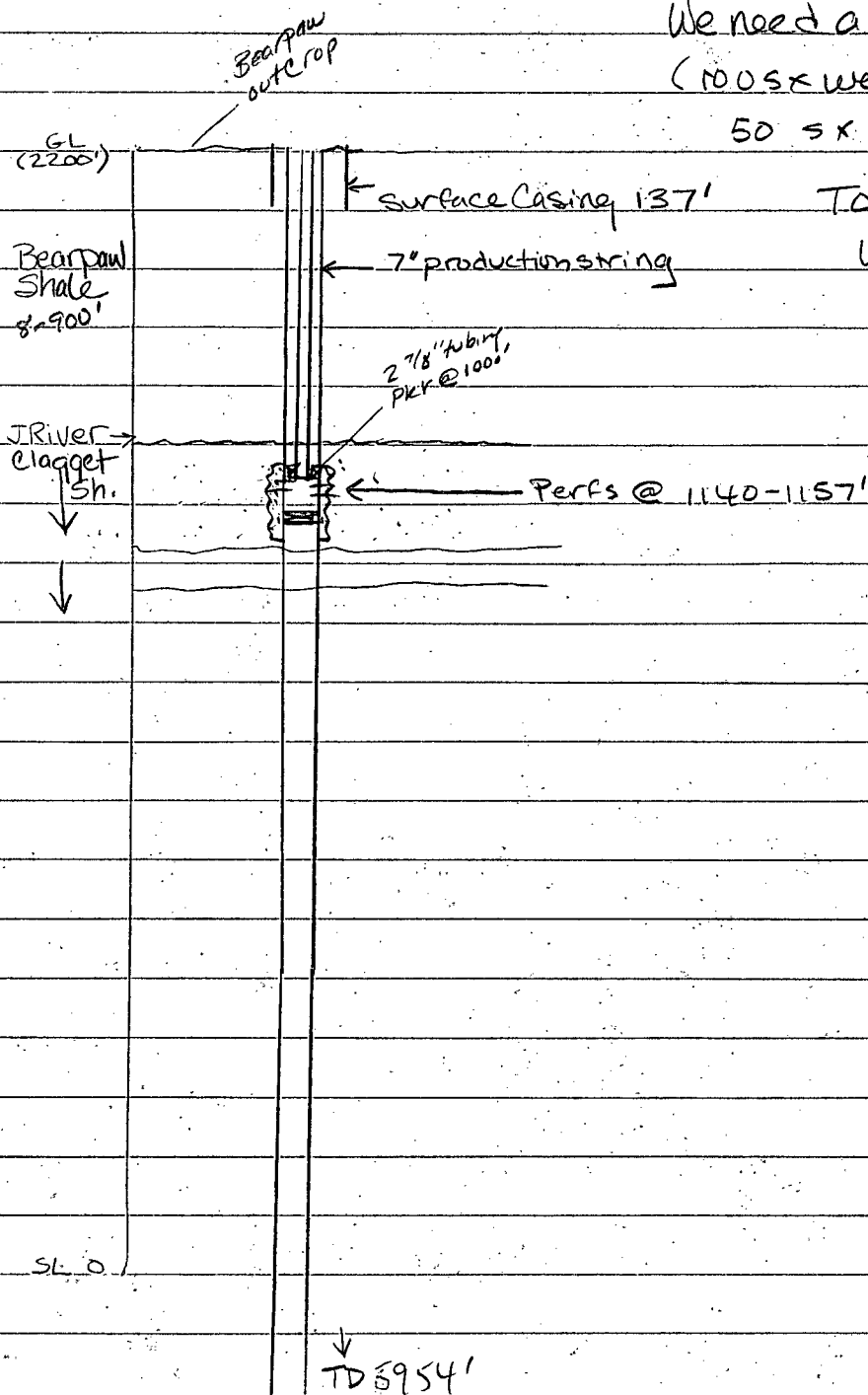
1. Isolation of zone of injection has been assured by squeeze cementing of test perfs just below the injection zone. - We need a CBL to make sure. (100's were squeezed in 2 intervals - 50's @ 1177-1178, 1179-1180)

Total: 658' of cement in 9" hole

We do not know where it went, however. If they

do not have a CBL -

they should run one, so we can ascertain that inj zone is isolated.



Buck Elk 2  
10-4-84  
MTS21PE-0009

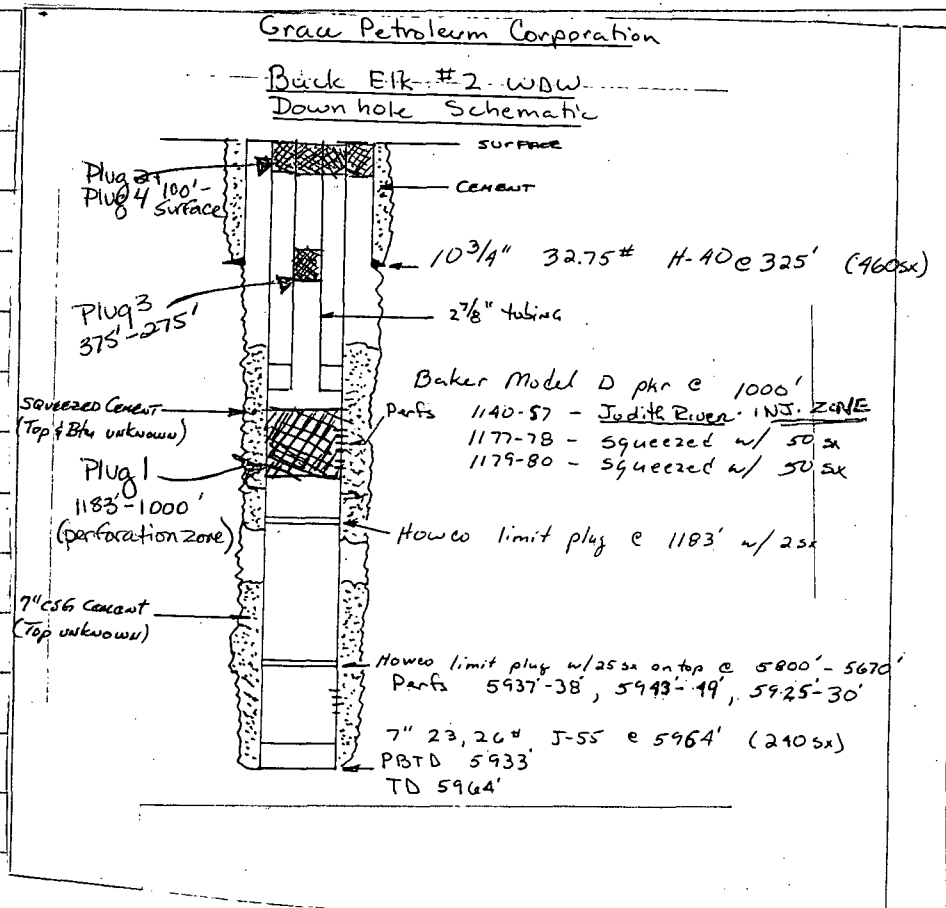
## P+A Plan

Plug #1 in 7" CSG (23#), 1183'-1000', 35sx, Class G  
 $(4.52)(1.15)(35sx) = 181.9'$  ✓

Plug #2 in 10<sup>3</sup>/<sub>4</sub>" CSG (32.75#), 100'-surface, 24sx, Class G  
 $(3.34)(1.15)(24) = 92.1'$  (Need more?)

Plug #3 in 7" CSG (23#), 375'-275', 19sx, Class G  
 $(4.52)(1.15)(19) = 98.7'$  ✓

Plug #4 in 7" CSG (23#), 100'-Surface, 19sx, Class G  
 $(4.52)(1.15)(19) = 98.7'$  ✓



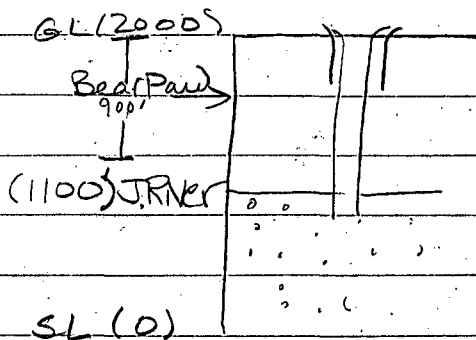
10/4/84

Buck Elk #2

# Review of Maps (Contour, Overlap)

In E9N51E, the Bearpaw Shale overlaps  
The JR occurs at about 100-120' (SL)  
(GL = 2200 approx) so the JR occurs  
at a depth of roughly 1000'.

Since the Bearpaw underlies the  
Fox Hills + Hell Creek Fms., the Judith  
River is the uppermost USDW, and  
that is where injection is taking  
place.



According to Marvin Miller, Chief, Hydrology Div.  
of the MT Bureau of Mines & Geology, the JR  
in this area has a TDS of roughly 4000 mg/l.  
He stated that the water is used mainly  
for stock watering. Miller contends that  
continued injection of 8800 TDS water will  
render the water untreatable for human or  
stock use. The disparity between the ambient  
+ injected water is great.



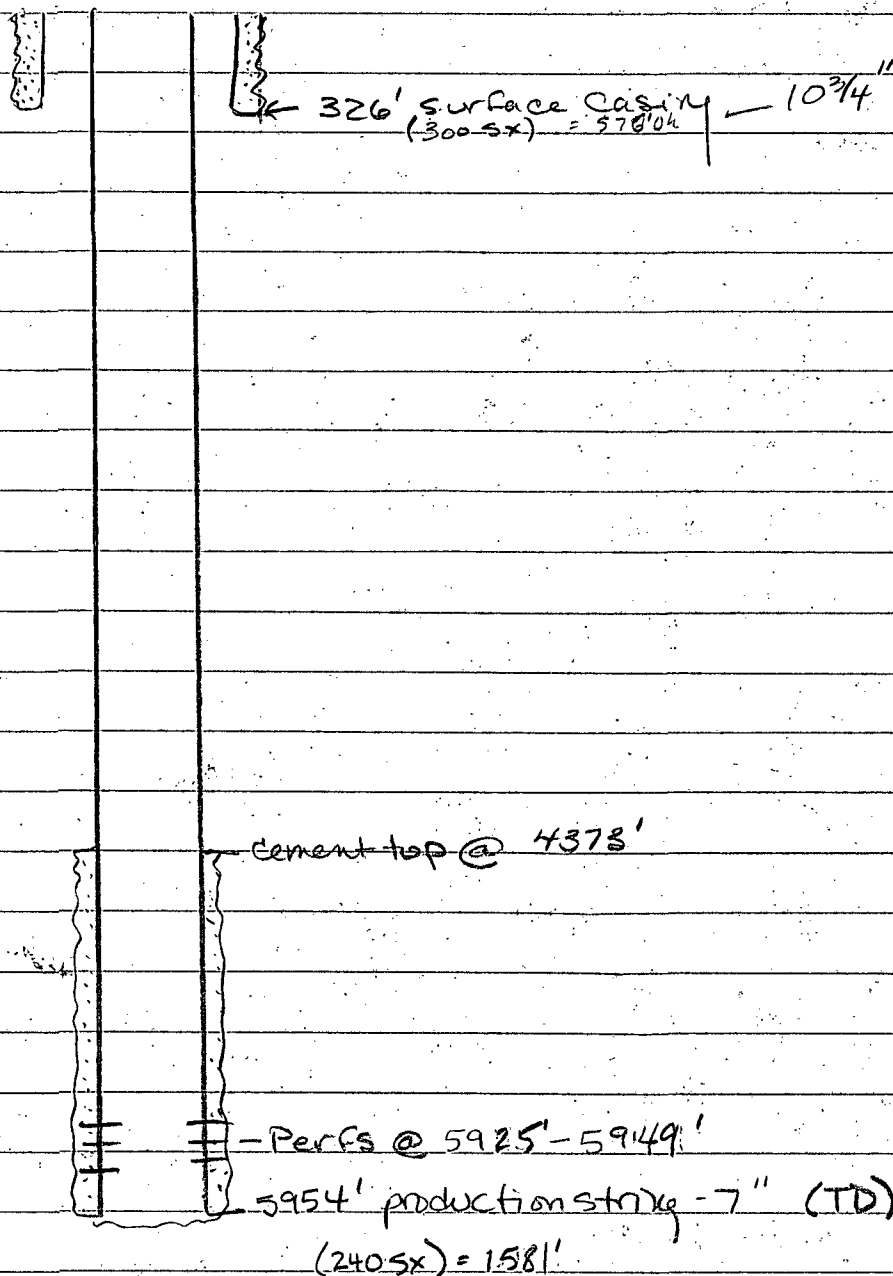
Microfiche Review

Buck Elk #2

MTS21PE-0009

10/4/84

I. Initial Completion: 15" Hole, 9" hole 10/5/55



## Tops -

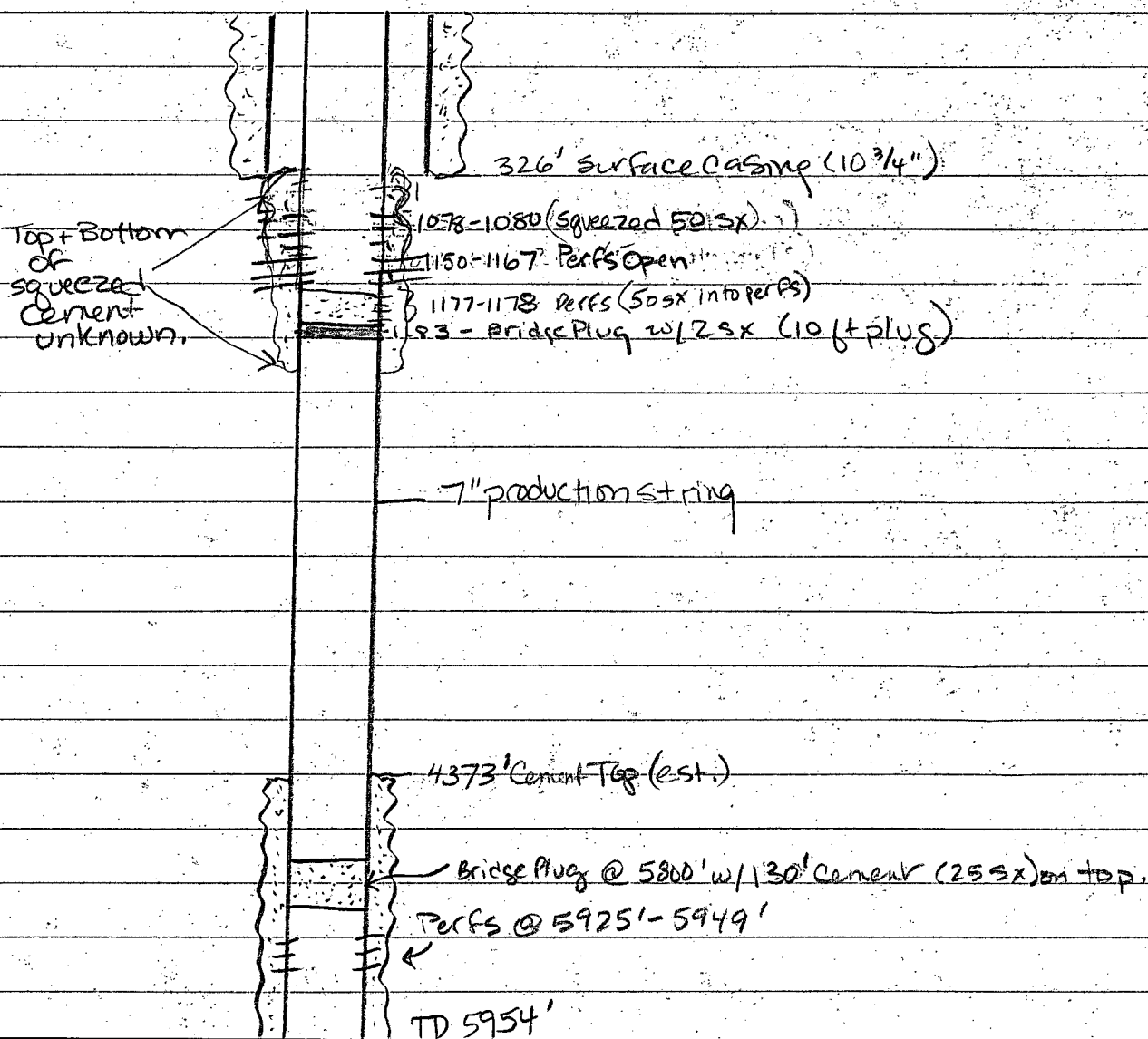
Greenhorn	2661'
New Castle	3230
Dakota	3445
Riordan	4396
Piper Shale	4560
Piper Lime	4650
Gyp Springs	4706
Spearfish	4908
Amsden	5040
Basal Amsden	5166
Otter	5235
Otter lime	5282
Kibby	5412
Kibby lime	5574
Charles	5673
'A' Zone	5803
'A' Zone Base	5829
B-1 Zone	5924.5
B-2 Zone	5943

③  
Buck Elk  
Microfiche  
10/4/84

II. 4/30/58 Well suspended. Dry hole.

III. 11/10/67 - Intention to convert to water disposal. JR located @ 1150-1167'

\* Tested for circulation zones @ 1177-1178,  
1079-1080 - Squeezed off w/ cement (50sx)



$$\pi r^2 h \rho = Q \times t$$

$$r = \sqrt{\frac{Qt}{\pi h \rho}}$$

$$\frac{2 \text{ ft}^3}{7.48 \text{ gal}} \cdot \frac{42 \text{ gal}}{\text{barrel}} \cdot \frac{1550 \text{ barrels}}{\text{day}} \cdot \frac{365 \text{ days}}{\text{yr}} \cdot 20 \text{ years}$$

$$= \frac{475,000,000 \text{ ft}^3}{\pi (270)(.15)}$$

$$= \frac{1932 \text{ ft}}{5280} = .36$$

Areal Radius of Influence  
Buck Elk #2

Glac - MT 521PE - 0009

$$r = \sqrt{\frac{V}{\pi p t}}$$

V = cumulative volume injected over life of the well

p = porosity

t = thickness of injection interval

$$V = 1500 \text{ BWD (MAX)} (30 \text{ yr field life}) (\text{injecting since } 67)$$

$$V = 1500 \frac{\text{BW}}{\text{D}} \cdot \frac{365 \text{ D}}{\text{yr}} \cdot 30 \text{ yr} \cdot \frac{42 \text{ G}}{\text{BW}} \cdot \frac{\text{ft}^3}{7.48} = 92,225,936 \text{ ft}^3$$

$$p = .15 \text{ (SS)}$$

$$t = 380'$$

$$r = \sqrt{\frac{92,225,936}{\pi (.15)(380)}} \quad \Rightarrow$$

$$r = \sqrt{\frac{92,225,936}{179}}$$

$$r = \sqrt{515228}$$

$$r = 717 \text{ feet}$$

$$r = \frac{717}{5280}$$

$$r = .14 \text{ mile}$$

1/4 mile is cool

Buck Elk 2  
10/4/84

~~That~~ Start of Basis  
Grace Petro Corp.

Buck Elk #2, Ross. Cty, MT  
(VIC Permit #MT521PE-0009)

## Switch Contacts - L.C. first

### Deser. of Facility & Background Info:

The Buck Elk #2 now is a shut-in disposal injection well. It functions only in emergency situations when produced fluid from the Buck Elk #1 & Cut Hair wells cannot be transferred to normal injec facilities (goings out #1).

~~The Buck Elk~~ The Buck Elk 2 has been used only occasionally in the past several years & serves as a temporary standby facility. It is ~~is required, however,~~ ~~to ensure~~ This injector, when utilized, injects produced water into the JR Frm ~~from~~ from two wells producing hydrocarbons from the Chas. Frm & as follows: 1) The Buck Elk #1 and 2) the Cut Hair #1. The Buck Elk #2 has been injecting into the JR <sup>oil</sup> since ~~the~~ December, 1967. There are no known <sup>well</sup>...

## Mechanical Integrity Permit Language

a) Initial demo... In addition, the permittee must demonstrate the location and integrity of the cement bond along the well bore above and below the injection zone. <sup>That shall be done by</sup> by <sup>running</sup> performing a CBL and to a depth from the surface to a depth of 1183'. The results of the CBL, along with an interpretive analysis shall be submitted to EPA prior to permit issuance.

Stnd:

The

EPA... Buck Elk #2. Well was originally constructed in 1955 as a producer in <sup>various zones</sup> of the Charles Sargent (5925-5949).

On 1958 the well was suspended from use ~~and was~~ as a dry hole. The well was converted into a water disposal in 1967. In doing so, ~~the~~ a bridge plug was set above the existing perforations <sup>in the casing</sup> @ 5800' with over 100' cement plug placed on top. An addl. plug was placed ~~at~~ in the 7" string @ 1183 w/ 10 feet of cement on top. The Judith River was tested for circulation in ~~these~~ ~~zones~~ two zones ~~failed~~ (1177-1178 and 1078-1080) ~~these~~ <sup>perforations</sup> zones were squeezed cemented w/ 50sx @ 0.4; ~~at that~~ The well ~~was~~ was then perforated in the interval 1147-1157 of the JR + a step rate test was run to ~~decrease~~ increase

M1-2-

circulation in the zone. A fm breakdown pressure of 900 psi (surface) was determined & <sup>the</sup> injection <sup>operation</sup> ~~was~~ commenced.

Because

Because of the need to isolate the inj. zone <sup>and the uncertainty of the placement of the cement via the squeeze</sup> ~~in the~~, <sup>we need to</sup> ~~we need to~~ <sup>must</sup> ascertain the location & integrity of the cement bonds in the injection zone. This will be accomplished by the operator performing a CBL. ~~to~~



8297

Buck Elk #2  
10-4-84Injection Interval

Permit Layer: JR 1140' - 1157'

St. of Basis: The Bearpaw Shale Fm outcrops in this area of mt. The Bearpaw is the shale which overlies the JR fm. The only other USDW's of ~~high~~ <sup>good</sup> quality are the Fox Hills & Hell Creek, and since they do not occur in the area, are not of concern to EPA.

The JR has been exempted in a 1/4 mile radius of the wellbore of the BE#2 as a USDW. <sup>Additionally,</sup> although the ambient wq of the JR in the area is reported to ~~be~~ contain roughly 4,000-5,000 TDS water, this well has been injecting ~~88,000~~ water of 88,000 TDS since 1967, and has already affected the <sup>quality</sup> of the water. <sup>Considering that</sup> ~~as~~ a back-up well, the Buck Elk I will continue to inject only sporadically and at moderate to low volumes, ~~the~~ <sup>by the fluid</sup> the injection fluid is expected to remain in a small area, and therefore, the inj. interval as shown is considered to be safe.

Buck Elk #2

10-4-84

Injection Pressure  
Permit

400 psi, as requested

Strat. of Bar's

Our files contain a record of a step rate test performed in 1967, when the subj well was converted from a producer to a disposal well. The formation breakdown pressure, as indicated by this test is 900 psi. The max. press rate requested of 400 psi, requested by the oppt. is well below the formation pressure and is considered safe.

Buck Elk 2  
10/4/84

Monitoring Reg.

RL

Same

S of B

Same

Buck Elk 2  
10/18/84

## Injection Volume

PL 1500 BWPD, and no more than an average daily rate of 525 BWPD, ~~or~~

ST Basis Same. Add. Since this well has been permitted ~~and~~ solely as a back-up well, EPA expects that the well will ~~not~~ <sup>inject</sup> be operated on a regular daily basis. If the well is to be used to inject more than 16,000 barrels of water per month, EPA must be notified and the permit reevaluated and modified if necessary.

<b>RECORD OF COMMUNICATION</b>	<input type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSSION <input type="checkbox"/> FIELD TRIP <input type="checkbox"/> CONFERENCE <input type="checkbox"/> OTHER (SPECIFY) _____	
(Record of item checked above)		
<b>TO:</b> Roger Frenette, Chief Drinking Water Branch	<b>FROM:</b> Ms. Felicity Hannay, Attorney for Grace Petroleum <i>WEEK-892-4326</i>	<b>DATE</b> 10/1/84 <hr/> <b>TIME</b> 12:30 PM
<b>SUBJECT</b> EPA Denial of Emergency Permits 0007, 0008 and 0009		
<b>SUMMARY OF COMMUNICATION</b>  <p>Received call from Ms. Felicity Hannay, Attorney for Grace Petroleum regarding our denial of Emergency Permits 0007, 0008 and 0009. She feels Grace Petroleum erred in their request (for Emergency Permits) and is certain that a soundly-based request can be submitted under "Subsection 3," as she called it. I chose not to get into details and offered that any explanation could best be made in a meeting by bringing her proposal forward.</p> <p>Ms. Hannay said that Grace Petroleum's BLM lease agreement will be jeopardized under current projected actions "if no petroleum is produced for a consecutive 30-day period." Further a BLM lease condition stipulates that "no brines leave the site." BLM has provided Grace Petroleum a temporary verbal release from that lease condition according to Ms. Hannay. Grace Petroleum is eager to discuss their option with us because they foresee serious lease and production difficulties ahead.</p> <p><u>Follow-up</u></p> <p>I informed Ms. Hannay that Pat Crotty would get back to Jim Johnson at 880-9130 to set up a meeting in our office for this week. I did not have staff schedule. At attendance would be Pat Crotty, Dick Long and Derrick Hobson. Ms. Hannay will accompany Jim Johnson.</p>		
<b>CONCLUSIONS, ACTION TAKEN OR REQUIRED</b>  <div style="border: 1px solid black; border-radius: 50%; width: 150px; height: 50px; margin: 20px auto;"></div>		
<b>INFORMATION COPIES</b> <b>TO:</b> Pat Crotty, Dick Long, <u>Laura Clemmens</u> and Derrick Hobson		

October 1, 1984

MEMORANDUM:

TO: Pat Crotty, Dick Long, Derrick Hobson, Roger Frenette  
FROM: Laura Clemmens  
SUBJECT: Conversation with BLM regarding Grace Petroleum

I called Pasqual Laborda of the Miles City office of the BLM in response to Roger's memo (attached). A representative from Grace had contacted him with regard to using a temporary disposal facility to handle the water that would normally be disposed of in the three shut-in wells we are currently permitting (EPU 110-XD, Goings Government, and Buck Elk 2). Grace cannot stop production from the source wells without losing their lease, so an alternative had to be found. According to Pasqual, Grace will be shipping the produced water to an existing well in Roosevelt County operated by Roosevelt Disposal Services. Grace will dispose of approximately 3000 BWPd of water into an existing salt water disposal well, thereby increasing the volume of disposal in that well by that amount (I don't know if we should be concerned about the additional disposal volume in the Roosevelt Disposal Services well at this time).

At my request, Pasqual told me that BLM will obtain the specific data on the temporary disposal well and send it to us as soon as possible. For future reference, what offices of BLM should we notify of our actions as stated in the MOU? The Billings office? The field offices? Someone should prepare a list of the appropriate addresses and phone numbers of the BLM contacts for our future use. I have sent copies of all our correspondence to Grace, as well as a copy of the 9/28 letter from Grace notifying us of their shutting in the three subject wells to Pasqual. For your information, Pasqual can be reached at (406) 232-4331.

<b>RECORD OF COMMUNICATION</b>		<input checked="" type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSS <input type="checkbox"/> FIELD TRIP <input type="checkbox"/> CONFERENCE <input type="checkbox"/> OTHER (SPECIFY) _____	
<b>TO:</b> Roger Frenette <i>RF</i>		(Record of item checked above) <b>FROM:</b> Mr. Pasquale (sp) Miles City Office of BLM	
<b>SUBJECT</b> Grace Petroleum		<b>DATE</b> 9/28/84 <b>TIME</b> 2:30 PM	
<b>SUMMARY OF COMMUNICATION</b>  <p>Received call from Mr. Pasquale (sp) of Miles City Office of BLM. He was attempting to help Grace Petroleum find alternative disposal practice/places that would result from shutting in wells 0007, 0008, and 0009. Fifteen (15) wells producing 157 bls/d of oil may need to be closed if alternatives are not found. (The brines from those 15 wells are currently injected in wells 0007, 0008, and 0009.)</p> <p>He was concerned that he had not received any data on our action per our MOU. Have we sent him a copy of our letter? If not, please do. I told him of the 3 items in our letter.</p> <p>I also told him of events that led up to our denial of Emergency permits. I told him wells 0007, 0008, and 0009 could <u>not</u> be used; penalty amounts were given.</p> <p>He will search for other existing S.W.D wells or existing brine pits as alternative temporary brine disposal practices.</p>			
<b>CONCLUSIONS, ACTION TAKEN OR REQUIRED</b>  <p>No action required.</p> <p><i>Action Taken: 10/1/84 - 4 Copies of all our correspondence to Grace, and a copy of Grace's letter informing us that they were shutting in were sent to Mr. Pasquale</i>  <i>Laura</i></p>			
<b>INFORMATION COPIES</b> <b>TO:</b> Laura Clemmens ✓      Info:cc: Pat Crotty, Dick Long			

Meeting 7-19-84 Pat. Dick, Mr. Derrick  
Grace Emergency Permit

~~Findings~~

We decided that their justification for requesting an emergency permit was not valid (144.34(a)(2)), and that neither of the other 2 reasons apply. Therefore, we cannot grant the emergency permit. The weakness in their rationale lies in the fact that they indeed could have made timely application for a permit. 144(a)(2)(1).

Action to be taken:

1) Letter to Johnson (cc: Office) stating denial of request for emergency permit + reasons why. Also to reiterate the fact that they are injecting illegally + incurring fines. ~~Have~~  
Only way is to shut in. (LAURA)

2) Draft Permits prepared - Laura will prepare draft permits ASAP.

3) Prepare Litigation Report - Derrick will initiate on 2nd or 3rd of October - Laura will assist.



Deficiency Response Review - Grace Petroleum - 9-<sup>12</sup>~~13~~84  
- Buck Elk #2 - (SI) 1,  
Received in ~~WMD~~ PUB 9-~~13~~84 (Recd in WMD 9-7-84)

1. Signatory - Complete
2. Description of Injection Operation - Complete.  
\* Concern - Injecting into Judith River - Have AE?
3. Permit Application Form - Complete. They ~~even~~ submitted new one.
- \* 4. Area of Notification - Complete.  
On this application, they mention that well is on Indian Lands. Straighten out. They have notified in a half-mile radius however. CLARIFY before drafting permit.
5. Topo Map - Complete. Meets all requirements of 144.31 (e)(7)
6. USDW's - Complete. Although I am concerned about the Judith River.
7. Geological Data - Complete.
8. Operating Data - Complete. Good Water Analyses
9. Plugging and Abandonment Plan - Complete.
10. Financial Resources - Complete. Bond submitted.

I certify this application to be complete 9-13-84. Sandra Clemmens

PERMIT APPLICATION REVIEW CHECKLIST

- I. For a new well (including conversions) there are 30 days to determine completeness. For an existing well, there are 60 days.
- II. All application requirements must be fulfilled. Requirements can be found in 144.31 as follows (this includes the amendment made in the May 11 promulgation, addition of 144.31(9)):

A. All applicants for permits shall provide the following information to EPA using the standard permit application form:

*No - to EPA using the standard permit application form*  
*Need description of the operation*  
1. The activities conducted by the applicant which require it to obtain a UIC permit.

*OK*  
2. Name, mailing address and location of the facility for which the application is submitted.

*NO - well add*  
3. Up to four SIC codes which best reflect the principal products or services provided by the facility.

*OK*  
4. Operator's name, address, telephone number, ownership status and status as Federal, State, private, public or other entity.

*OK*  
5. Whether the facility is located on Indian lands.

*OK*  
6. Listing of all permits or construction approvals received or applied for under any of the following programs: UIC; NPDES; PSD; Nonattainment; NESHAPS; 404; Other relevant environmental permits, including State permits.

*NO - with request under 144.31*  
7. Topographic map (or other, if topo is unavailable) extending one mile beyond the property boundaries of the source, depicting facility; each well where fluids are injected underground, springs and other surface water boundaries, and drinking water wells listed in public record or otherwise known to applicant within 1/4 mile of facility property boundary.

*OK (see 1. 7)*  
8. Brief description of nature of business.

*NO - will request under 1355*  
9. List of names and addresses of all owners of record of land within 1/4 mile of facility boundary.

*NO - will request*  
10. All required attachments as listed below. See the reverse of the permit application form for details.

### Attachments for Class II Wells (Existing)

- a. Area of Review Methods
- e. Name and Depth of USDWs
- g. Geological Data on Injection and Confining Zone
- h. Operating Data
- m. Construction Details
- q. Plugging and Abandonment Plan
- r. Financial Responsibility
- s. Aquifer Exemption Requests
- t. Existing EPA Permits
- u. Description of Business

### Attachments for Class II Wells (New)

- a. Area of Review Methods
- b. Maps of Wells/Area and Area of Review
- c. Corrective Action Plan and Well Data
- e. Name and Depth of USDWs
- g. Geological Data on Injection and Confining Zone
- h. Operating Data
- m. Construction Details
- q. Plugging and Abandonment Plan
- r. Financial Responsibility

B. If the well needs an aquifer exemption, get the necessary information from the application, or request it from the applicant. The well cannot be permitted without an aquifer exemption.

C. All signature and certification requirements must also be complied with. Requirements are listed in 144.32. They are as follows:

\_\_\_\_ 1. All permit applications shall be signed as follows:

- a. For a corporation: by a principal executive officer of at least the level of a vice-president;
- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- c. For a municipality; State, Federal or other public agency: By either a principal executive or ranking elected official.

D. For Class II wells only, the permit application may also be signed by a duly authorized representative of any person in the above paragraph. Duly authorized representatives are described in 144.32(b).

III. If the application is incomplete, list all the information necessary to make the application complete, and draft a transmittal letter for the RA's signature requesting the missing information.

IV. If the application is complete, prepare a letter for the RA's signature notifying the applicant of the determination of completeness and of the effective date of the permit application. If the permit is for a major facility, draft a project decision schedule as well.

Has an AE  
10/81

## Buck Elk #2 - Completeness Review 8/13/84

1. Signatory
2. SIC Codes - 1311
3. Same as Goings
4. Same as Goings
5. Same as Goings
6. Same " " - see both comments. Pg 1 + Pg 2.
7. Same as "
8. " "
9. "
10. ~~Same as~~ <sup>66</sup> (Downhole Di's. OK.)
11. Same as -

Correspondence to Applicant  
From EPA

FILE BUCK ELK

RECORD OF COMMUNICATION		<input checked="" type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSS <input type="checkbox"/> FIELD TRIP <input type="checkbox"/> CONFERENCE <input type="checkbox"/> OTHER (SPECIFY) _____	
		(Record of item checked above)	
TO:	Larry Munson	FROM:	Clemmens
		DATE:	8/1/85
		TIME:	3:40
SUBJECT		Buck Elk #2 Well - Grace Petroleum	
SUMMARY OF COMMUNICATION		FILE BUCK ELK	
<p>Munson said that Ron Rexted (sp?) of Grace Petro had just called + was at that very moment at the site of the Buck Elk #2, with George McClammy (of Ft. Peck). Jack Nance had spoken w/ Munson 15 minutes ago!</p> <p>McClammy, who has visited the site before, was going to be briefed on the "4-valve" operation <sup>by his boss</sup> by Ron. McClammy was instructed <del>to get</del> to be <del>at</del> on the alert for any changes to the site, and to get <u>very clear</u> explanations from Ron. Larry Munson remains skeptical, he was adamant that fluids were being injected <sup>down the</sup> Buck Elk #2.</p>			
CONCLUSIONS, ACTION TAKEN OR REQUIRED			
<p>At- Call Larry and George BEFORE 10:00 tomorrow. Also - call Paul + get him to join you. Munson's # is 585-5011, 768-5331</p> <p>Let me know what happens. Luan</p>			
INFORMATION COPIES			
TO: File			